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**ORGANIZATION *and* STAFFING**

*for*

**LOCAL HEALTH SERVICES**

**January 1, 1960**

**U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE**  
**Public Health Service**



# **ORGANIZATION *and* STAFFING *for* LOCAL HEALTH SERVICES**

**Analysis of information  
submitted to the  
Public Health Service  
in  
REPORT OF PUBLIC HEALTH PERSONNEL  
as of January 1, 1960**

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**U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE**

**Public Health Service  
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## INTRODUCTION

Annually, since 1946, reports have been received from health organizations serving local areas. These reports have indicated the geographical areas served by the health unit and the personnel employed by the official health agency<sup>1/</sup>. These reports also included data on the full-time public health employees of other official governmental agencies. Through 1956, units included were required to meet the definition of a full-time health organization. This definition required that the unit be prepared to render medical, nursing, and sanitation services during the regular work week of the governmental unit to which it was attached and be under the full-time direction of a health officer or other administrative head. Difficulty in interpreting this definition over the years led to the adoption of a new reporting procedure in 1958. For both that year and 1960 all local health units recognized by their respective State health department as organized to provide public health services, irrespective of whether or not medical, nursing, and sanitation public health services are available at all times, were requested to submit the report.

Also, reports previous to 1958 included data for only full-time employees. Since in many areas the part-time professional and technical staff make a significant contribution to the modern public health program, data were collected for 1958 and for 1960 on the part-time professional and technical employees of local health units.

Thus, the data prior to 1958 are not comparable to those collected in subsequent years. However, the new series of data beginning in 1958 should prove useful in formulating new patterns of organization for local health services and in the determination of staffing needs for such patterns of organization.

A total of 1,557 health units submitted the "Report of Public Health Personnel" (PHS Form 803) as of January 1, 1960. These reports included full-time employees of health units and other governmental agencies and the part-time professional and technical personnel employed by the organized health unit.

In addition to the information reported in the "Report of Public Health Personnel," selected socio-economic data and expenditure data which reflect some of the characteristics of the jurisdictions reporting are incorporated in this analysis. Such data include information on the expenditures of health units, as reported to the Public Health Service by State health departments for the fiscal year 1959, and the per capita income of reporting health jurisdictions. The latter is based on the net effective

<sup>1/</sup> Analysis of data reported for 1946, 1947, and 1949 through 1958 available in published form. Data reported for 1948 unpublished.

buying income of counties and cities as published in Sales Management, "Survey of Buying Power," May 1959.

The terms "organization," "unit," "jurisdiction," and "department" are used synonymously throughout the analysis which is presented in four sections. These sections are as follows:

- (1) Extent of Coverage by Reporting Local Health Organizations,
- (2) Selected Characteristics of Areas Organized for  
Local Health Services,
- (3) Financial Capacity of Organized Areas and Expenditures  
in such Areas for Public Health,
- (4) Personnel Engaged in Local Public Health Programs.



## EXTENT OF COVERAGE BY REPORTING LOCAL HEALTH ORGANIZATIONS

Reporting units in 1960 considered by the several State health departments to be organized for local health service numbered 1,557, an increase of 77 units over the number reporting in 1958. These units included 2,425 counties and 307 cities which serve an estimated population of slightly more than 167 million, or 94.4 percent of the population. The increase in units in the current year was largely the result of counties previously considered as a part of local health districts reporting in 1960 as separate county health departments. In some instances this may reflect a true change in organization, but in many it only represents a changed interpretation of the definition of the several categories of health organization. Areas not included in organized reporting jurisdictions comprised 647 counties, or about 21 percent of the 3,072 counties in the States, and about 6 percent of the estimated population which amounted to nearly 10 million persons.

The Public Health Service classifies health units organized to provide local health services into four types. These are as follows:

1. Single county units - serve a single county and may or may not serve the city or cities therein, depending upon the existence of separate city health units.
2. City health departments - serve a single city. In three instances such departments serve a total of seven entire counties because of conterminous boundaries. These cities are New York (serving five counties), Philadelphia, and New Orleans.
3. Local health districts - serve two or more counties or other types of local governmental units. In such districts contiguous counties or municipalities have combined their resources and formally organized a single operating health unit with control vested in local authority and directed by one health officer or administrative head.
4. State health districts - organized either for providing direct local services or for providing advisory and supervisory services to various types of local governmental units. In such districts, control is vested in the State.

As mentioned above, the 1960 reports reflected an increase in the number of reporting units of the single county classification. In the current reports, 58 percent are in this classification. (See table 1.) These units serve more than 39 percent of the total estimated United States population. The number of city health departments increased from 281 in 1958 to 307 in 1960 largely because of wider participation of units of this type in completion of the "Report of Public Health Personnel." City units account for nearly 20 percent of the units and provide services to over 28 percent of the

Table 1.--Extent of Coverage of the Country by Health Organizations of Designated Types  
Reporting Local Health Services  
January 1, 1960

Type of health organization	Health organizations <u>1/</u>		Counties		Population <u>2/</u>	
	Number	Percent	Number	Percent	Number	Percent
Total number of counties and population in U. S.	-	-	<u>3,072</u>	<u>100.0</u>	<u>177,021,000</u>	<u>100.0</u>
Total number of health organizations reporting, counties and population included:						
Single county	1,557	100.0	2,425	78.9	167,150,351	94.4
City health department	902	58.0	(902)	(29.4)	(69,702,064)	(39.4)
Local health district	307	19.7	(7) <sup><u>3/</u></sup>	( 0.2)	(49,913,173)	(28.2)
State health district (actual service and supervisory)	237	15.2	(665)	(21.6)	(15,648,281)	( 8.8)
	111	7.1	(851)	(27.7)	(31,886,833)	(18.0)
Total number of counties and population in unreported areas	-	-	647	21.1	9,870,649	5.6

1/ Includes all reporting units considered by the respective State health departments to be organized health departments.

2/ Estimated as of July 1, 1959. Based on estimated populations of local areas as reported by the States to the Bureau of the Census, with adjustments made on the basis of State totals as estimated by the Bureau of the Census as of that date.

3/ These seven counties are served by city health departments, the county and city being conterminous. The cities involved are: New Orleans, New York (5 counties), and Philadelphia.



estimated population of the country. Within the past few years, several city health departments have combined with their respective county health departments.

There were 237 local health districts which reported in 1960 as compared to 261 in 1958. This reduction was largely the result of changes made in the classification of units in a few States. Counties which were formerly reported as a part of a district health unit were reported as single county units in 1960. Local health district organizations provide service in 665 counties and serve nearly 9 percent of the population.

Although relatively few in number, State health districts--numbering 111--accounted for over one-third of the total counties served by some type of health organization. The population included in these districts constitutes 18 percent of the total population of the country.

Only 5.6 percent of the population of the United States reside in the 647 counties without organized local health services. These counties are located primarily in the mountain and Great Plains areas and present problems in the development of local health organizations. The conventional organizational patterns of providing local health services have not been readily accepted in governmental jurisdictions covering large areas with sparse population.

Table 2 shows the coverage of each State according to population of the organized areas, the number of organizations reporting, and the counties included. Local health services were reported to be available through either State or locally organized units to the entire population of 27 States, including Alaska, Hawaii, and the District of Columbia. Since Alaska and Hawaii are fully organized but are included for the first time in the 1960 data, the number of States with complete coverage remains the same as that of two years ago. In 26 States, every county was included among the organized areas, but some city areas within one of these States was not covered.

A grouping of the States according to the percent of each State's population served by recognized health organizations reveals that the 26 States and the District of Columbia in the 100 percent group, mentioned previously, comprise 63 percent of the total population of the country. (See table 3.) In 13 other States, 75 to 99.9 percent of the population reside in areas covered by some type of health organization. In 6 States, local health services are available to between 50 and 74 percent of the total residents, and in 5 States, less than 50 percent of the population reside in areas organized for local health service. Vermont remains the only State with no local health organizations.

Local governmental organization influences the pattern of providing local health services. Therefore, there is wide variation among the States in the types of organizations prevailing. As can be seen from figure 1, which shows for each State the proportion of the population served by the different types of units, 23 States have 3 or more types of organizations. Ten States have only one type of health organization.

Table 2.--Population of Reporting Areas in Each State Having Organized Local Health Units,  
Number of Health Organizations Represented, and Number of Counties Included  
January 1, 1960

State	Total population <sup>1/</sup>	Areas reporting				Total counties in each State
		Population <sup>1/</sup>	Percent of total population	Number of health organizations	Number of counties, included <sup>2/</sup>	
Totals	177,021,000	167,150,351	94.4	1,557	2,425	3,072
Alabama	3,193,000	3,193,000	100.0	67	67	67
Alaska	191,000	191,000	100.0	6	- <sup>3/</sup>	-
Arizona	1,233,000	1,061,588	86.1	6	6	14
Arkansas	1,744,000	1,600,294	91.8	27	65	75
California	14,639,000	14,508,688	99.1	48	52	58
Colorado	1,682,000	1,373,829	81.7	12	20	63
Connecticut	2,415,000	1,252,934	51.9	16	-	8
Delaware	454,000	454,000	100.0	4	3	3
Dist. of Columbia	840,000	840,000	100.0	1	-	-
Florida	4,761,000	4,727,365	99.3	41	66	67
Georgia	3,838,000	3,838,000	100.0	33	159	159
Hawaii	656,000	656,000	100.0	4	5	5
Idaho	664,000	451,899	68.1	6	23	44
Illinois	10,205,000	10,205,000	100.0	36	102	102
Indiana	4,638,000	4,638,000	100.0	24	92	92
Iowa	2,809,000	2,809,000	100.0	11	99	99
Kansas	2,140,000	2,140,000	100.0	24	105	105
Kentucky	3,125,000	3,125,000	100.0	122	120	120
Louisiana	3,166,000	3,144,032	99.3	63	63	64
Maine	949,000	949,000	100.0	10	16	16
Maryland	3,031,000	3,031,000	100.0	24	23	23
Massachusetts	4,951,000	4,951,000	100.0	63	14	14
Michigan	7,960,000	7,215,381	90.6	42	68	83
Minnesota	3,399,000	3,399,000	100.0	16	87	87
Mississippi	2,185,000	2,185,000	100.0	38	82	82
Missouri	4,243,000	4,243,000	100.0	47	114	114
Montana	687,000	137,999	20.1	4	6	56
Nebraska	1,456,000	538,560	37.0	4	4	93
Nevada	280,000	201,781	72.1	2	2	17
New Hampshire	592,000	310,358	52.4	13	-	10
New Jersey	5,930,000	5,930,000	100.0	78	21	21
New Mexico	879,000	879,000	100.0	10	32	32
New York	16,495,000	16,495,000	100.0	42	62	62
North Carolina	4,530,000	4,530,000	100.0	80	100	100
North Dakota	642,000	352,430	54.9	7	30	53
Ohio	9,700,000	9,700,000	100.0	72	88	88
Oklahoma	2,276,000	1,888,232	83.0	48	48	77
Oregon	1,766,000	1,510,521	85.5	17	19	36
Pennsylvania	11,323,000	11,323,000	100.0	30	67	67
Rhode Island	875,000	875,000	100.0	8	5	5
South Carolina	2,417,000	2,371,374	98.1	50	46	46
South Dakota	687,000	118,753	17.3	2	1	67
Tennessee	3,501,000	3,479,191	99.4	65	92	95
Texas	9,513,000	6,608,561	69.5	51	60	254
Utah	880,000	874,606	99.4	29	28	29
Vermont	372,000	*	*	*	*	14
Virginia	3,992,000	3,992,000	100.0	49	98	98
Washington	2,823,000	2,823,000	100.0	35	39	39
West Virginia	1,965,000	1,959,984	99.7	42	54	55
Wisconsin	4,010,000	4,010,000	100.0	27	71	71
Wyoming	319,000	57,991	18.2	1	1	23

1/ Estimated as of July 1, 1959. Based on estimated populations of local areas as reported by the States to the Bureau of the Census, with adjustments made on the basis of State totals as estimated by the Bureau of the Census as of that date.

2/ Includes 7 counties which are served by city health departments, the county and city being conterminous. The cities involved are: New Orleans, New York (5 counties), and Philadelphia.

3/ Alaska is divided into judicial divisions rather than counties.

\* Vermont has no local health units recognized by the State health department.

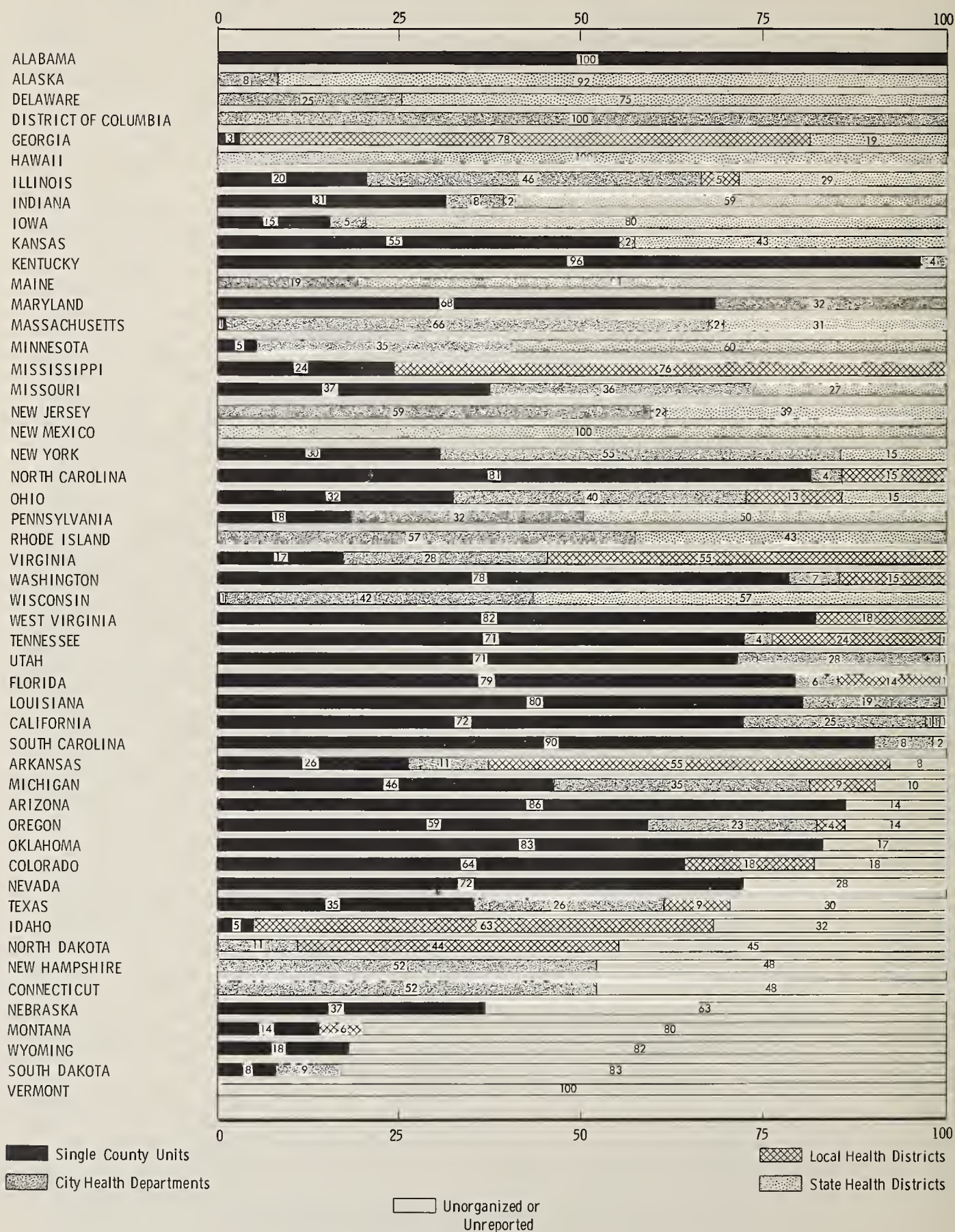
Table 3.--Percent of Each State's Total Population Covered by Health Organizations, Arranged by Percentage Groups, Showing Number of States, and Total Population of the States and Population of Organized Areas Represented within Each Group  
January 1, 1960

Percentage group	Number of States	P o p u l a t i o n <sup>1/</sup>		
		Total U.S.	Percent	Organized areas
Totals	<u>51</u>	<u>177,021,000</u>	<u>100.0</u>	<u>167,150,351</u>
None	1	372,000	0.2	-
1 - 24	3	1,693,000	1.0	314,743
25 - 49	1	1,456,000	0.8	538,560
50 - 74	6	14,106,000	8.0	9,177,963
75 - 99†	13	47,990,000	27.1	45,715,085
100	27	111,404,000	62.9	111,404,000
				<u>100.0</u>

<sup>1/</sup> Estimated as of July 1, 1959. Based on estimated populations of local areas as reported by the States to the Bureau of the Census, with adjustments made on the basis of State totals as estimated by the Bureau of the Census as of that date.



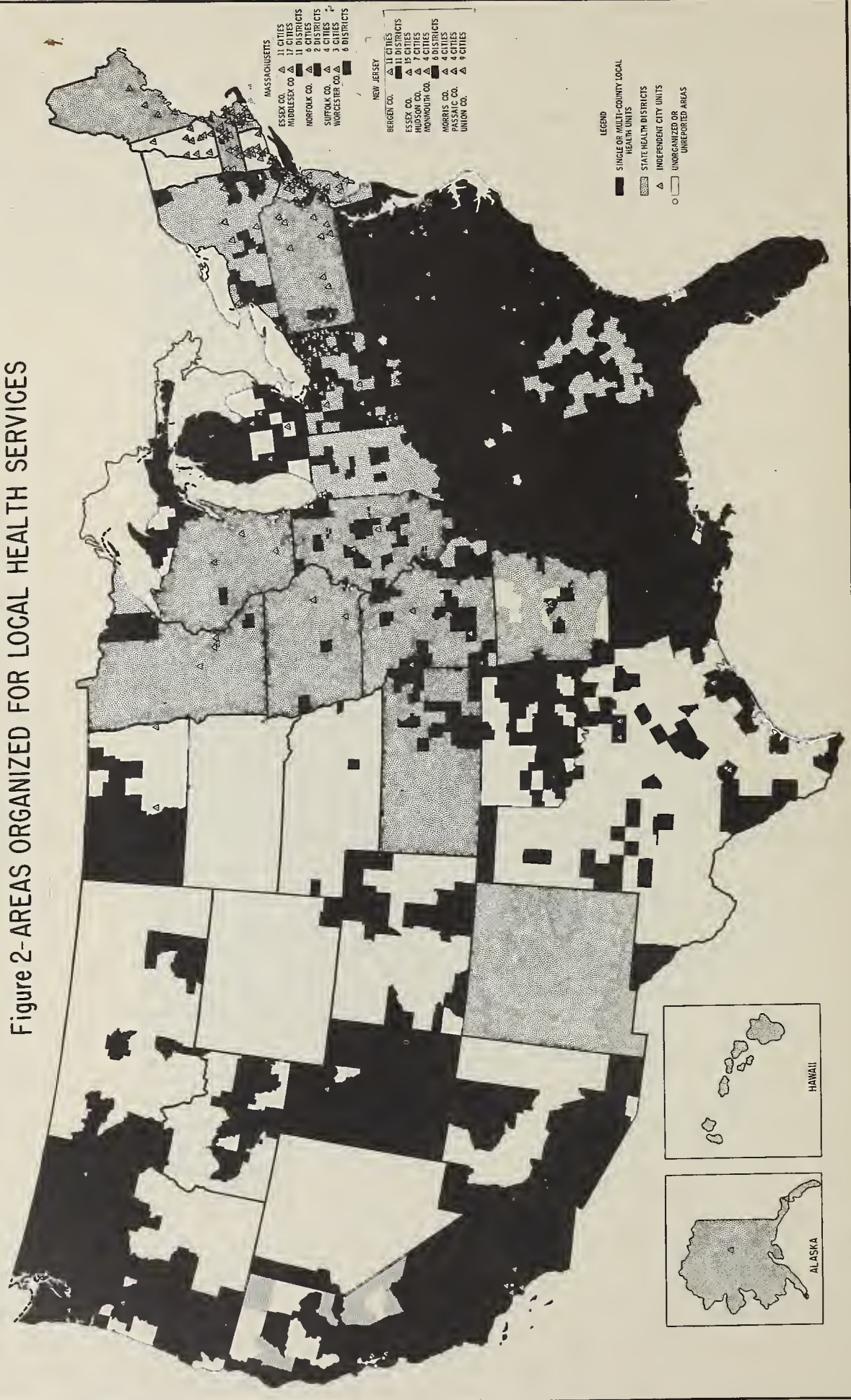
Figure 1. PERCENT OF EACH STATE'S TOTAL POPULATION COVERED BY VARIOUS TYPES OF LOCAL ORGANIZATION



Geographic differences in types of health organization and extent of coverage of the Nation are portrayed in figure 2. Independent city health units are predominately located in the northeastern part of the country, while single county units and local health districts prevail in the Southeastern and South Central States. The States which have organized State health districts to provide or supplement services to local areas are predominately in the North Central and Northeastern States. It will be noted that the extent of coverage in the southeastern and south central areas is much greater than in other areas. Absence of any type of local health organization is readily apparent throughout a large portion of the Rocky Mountain States, the Great Plains area, the Southwest, and in some sections of New England.



Figure 2-AREAS ORGANIZED FOR LOCAL HEALTH SERVICES



## SELECTED CHARACTERISTICS OF AREAS ORGANIZED FOR LOCAL HEALTH SERVICES

### Population Size of Areas Served

The number and percent of health units in various population groupings do not vary appreciably from year to year. The data contained in this report reflect a slight shift to a higher proportion of the units serving smaller population groups. This is in contrast to a slight trend toward units serving larger populations which has been evident in data for prior years. The apparent reversal of this trend is primarily the result of some States classifying organized counties as single units which were formerly reported in local health districts.

The data continue to reflect need for the development of local health departments serving jurisdictions with larger populations. Table 4 indicates that there are now 17 single county units, each of which serves less than 5,000 people. A total of 189 units submitting this report as compared to 153 units reporting for 1958 serve populations of 5,000 to 15,000 persons, and 214 units as compared to 191 units serve populations of 15,000 to 25,000 population.

Thus, 38 percent of the local health organizations reporting serve populations of less than 35,000 despite the recognized fact that the minimum population of a jurisdiction should exceed this number for the most economical operation. Nearly 49 percent of the single county units and more than 34 percent of the city health departments have less than 35,000 population residing in their jurisdictions. Also, 18 percent of the local health districts serve areas with populations under 35,000.

There is little question but that a health jurisdiction should include a population of at least 50,000 if the department is to be properly staffed and still remain relatively economical in operation. About 47 percent of all reporting jurisdictions fall in the population groups exceeding 50,000. Slightly over 24 percent are in the population group of 50,000 to 100,000, nearly 14 percent in the 100,000 to 250,000 grouping, and nearly 9 percent in the 250,000 to 500,000 or over.

### Land Area and Density of Population

The sparsity of population continues to be a real problem in planning for the establishment of a health jurisdiction in many sections of the country. Frequently, the expanse of areas containing the desirable minimum population is too large to permit operation of a health department on an effective and economical basis. The advantages of a compact area are many, the most significant ones being lower operating costs, better utilization of personnel, and accessibility to all residents of the area. Tables 5 and 6 give a distribution of health organizations according to land area and density of population of the jurisdictions, respectively. In both tables, the 307 city health departments have been excluded from consideration, because land area and number of persons per square mile have no particular significance in the provision of local health services in urban areas.



Table 4.--Distribution of Health Organizations of Different Types,  
According to Population of the Area Served  
January 1, 1960

Population group <sup>1/</sup>	Percent of population served	All organized areas				Type of health organizations							
		Organizations		Counties included		Single county		City health department		Local health district		State health district	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals	<u>100.0</u>	<u>1,557</u>	<u>100.0</u>	<u>2,425</u>	<u>100.0</u>	<u>902</u>	<u>100.0</u>	<u>307</u>	<u>100.0</u>	<u>237</u>	<u>100.0</u>	<u>111</u>	<u>100.0</u>
Less than 5,000	*	17	1.1	17	0.7	17	1.9	-	-	-	-	-	-
5,000 - 15,000	1.2	189	12.1	162	6.7	157	17.4	28	9.1	3	1.3	1	0.9
15,000 - 25,000	2.5	214	13.7	184	7.6	152	16.9	45	14.7	16	6.7	1	0.9
25,000 - 35,000	3.1	173	11.1	179	7.4	113	12.5	32	10.4	24	10.1	4	3.6
35,000 - 50,000	6.2	242	15.5	300	12.4	134	14.9	50	16.3	54	22.8	4	3.6
50,000 - 100,000	15.4	375	24.1	544	22.4	176	19.5	75	24.4	112	47.3	12	10.8
100,000 - 250,000	19.5	213	13.7	473	19.5	99	11.0	47	15.3	26	11.0	41	37.0
250,000 - 500,000	16.1	77	5.0	372	15.3	32	3.5	13	4.2	1	0.4	31	27.9
500,000 and over	36.0	57	3.7	194	8.0	22	2.4	17	5.6	1	0.4	17	15.3

<sup>1/</sup> Estimated as of July 1, 1959. Based on estimated populations of local areas as reported by the States to the Bureau of the Census, with adjustments made on the basis of State totals as estimated by the Bureau of the Census as of that date.

\* Less than 0.05 percent.



Table 5.--Distribution of Health Organizations of Different Types  
According to Land Area of Jurisdiction <sup>1/</sup>  
January 1, 1960

Area in square miles	Percent of population served	All organized areas				Type of health organization					
		Organizations		Counties included		Single county		Local health district		State health district	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals (exclusive of city health departments)	100.0	1,250	100.0	2,418	100.0	902	100.0	237	100.0	111	100.0
No data	0.1	4	0.3	-	-	-	-	-	-	4	3.6
Under 1,000	49.0	816	65.3	885	36.6	737	81.7	66	27.9	13	11.7
1,000 - 2,500	22.7	263	21.0	567	23.4	112	12.4	130	54.9	21	19.0
2,500 - 4,000	5.4	52	4.1	126	5.2	22	2.4	20	8.4	10	9.0
4,000 - 5,500	6.5	35	2.8	164	6.8	13	1.5	6	2.5	16	14.4
5,500 - 7,000	4.2	27	2.2	143	5.9	8	0.9	6	2.5	13	11.7
7,000 - 8,500	5.5	22	1.8	173	7.2	4	0.5	5	2.1	13	11.7
8,500 -10,000	2.1	9	0.7	98	4.1	3	0.3	-	-	6	5.4
10,000 and over	4.5	22	1.8	262	10.8	3	0.3	4	1.7	15	13.5

<sup>1/</sup> Because land area has no particular significance in the provision of local health services in areas served by city health departments, the 307 reporting cities and the 6 counties covered by city health departments have been omitted from this table.

Table 6.--Distribution of Health Organizations of Different Types,  
According to Density of Population of Jurisdiction <sup>1/</sup>  
January 1, 1960

Number of persons per square mile	Percent of Population served	All organized areas				Type of health organization					
		Organizations		Counties included		Single county		Local health district		State health district	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals (exclusive of city health departments)	100.0	1,250	100.0	2,418	100.0	902	100.0	237	100.0	111	100.0
Unknown	0.2	4	0.3	-	-	-	-	-	-	4	3.6
Under 2	*	9	0.7	9	0.4	9	1.0	-	-	-	-
2 - 6	0.6	36	2.9	71	2.9	24	2.7	7	2.9	5	4.5
6 - 18	4.0	98	7.8	279	11.5	53	5.9	30	12.7	15	13.5
18 - 45	15.8	401	32.1	878	36.3	280	31.0	92	38.8	29	26.2
45 - 90	20.8	372	29.8	677	28.0	274	30.4	77	32.5	21	18.9
90 - 180	17.0	165	13.2	296	12.3	129	14.3	17	7.2	19	17.1
180 - 360	14.2	80	6.4	124	5.1	67	7.4	2	0.8	11	9.9
360 and over	27.4	85	6.8	84	3.5	66	7.3	12	5.1	7	6.3

<sup>1/</sup> Because density has no particular significance in the provision of local health services in areas served by city health departments, the 307 reporting cities and 6 counties covered by city health departments have been omitted from this table.

\* Less than 0.05 percent.

The population of jurisdictions with a land area of less than 1,000 square miles accounts for approximately one-half of the total population residing in organized areas. Slightly more than 65 percent of all reporting organizations--other than cities--and 37 percent of the counties covered are in this land area interval. The number of single county units serving areas of less than 1,000 square miles increased from 686 in 1958 to 737 in 1960. These units constitute nearly 82 percent of all single county units. Of the 237 local health districts, only 66 as compared with 84 in the previous report serve areas encompassing less than 1,000 square miles. Thirteen, as compared to 19 in 1958, of the State health districts also are in this land area grouping.

Twenty-one percent of all jurisdictions and more than 23 percent of the organized counties include an area of between 1,000 and 2,500 square miles. Local health districts are predominant in this land area interval, with 55 percent of the reporting units of this type included in this group.

Although only slightly over 13 percent of the 1,250 units--excluding city units--are in land area groupings which exceed 2,500 square miles, the number of counties in these reporting health jurisdictions constitute 40 percent of the total counties covered and more than 28 percent of the total population residing in organized areas.

The average number of persons per square mile in each reporting jurisdiction varies from less than 2 to more than 360. Table 6 shows the distribution of organizations--excluding city units--according to density of population. As in previous years, the density intervals of 18 to 45 and 45 to 90 include the largest representation of health units. About 32 percent of the units and 36 percent of the counties are in the interval from 18 to 45 persons per square mile, and approximately 30 percent of the units and 28 percent of the counties are in the interval of 45 to 90 persons per square mile. The population represented in these two density intervals amounts to slightly less than 37 percent of the population served by the 1,250 organizations. Although the number of units and counties included in density intervals which exceed 90 persons per square mile is relatively small, approximately 59 percent of the population served by local health services reside in these areas. As would be expected, the single county health department is the most prevalent type of unit in the higher density intervals.

More than 11 percent of the health jurisdictions have a population density of less than 18 persons per square mile. Of the total counties with organized health services, 15 percent are in these jurisdictions. About 5 percent of the population is represented in these extremely sparsely settled areas.



## FINANCIAL CAPACITY OF ORGANIZED AREAS AND EXPENDITURES IN SUCH AREAS FOR PUBLIC HEALTH

The economic status of a community as measured by per capita personal income is a significant factor in planning for the administration of local public health services to meet the health needs of the community. It is an established fact that such needs are usually greater in areas with a low income level than in areas with a high income level. The financial capacity of reporting health jurisdictions was measured in terms of effective buying incomes<sup>1/</sup> of residents in counties and cities during 1958, as compiled by Sales Management, "Survey of Buying Power."

The expenditure data presented are based on reports submitted for fiscal year 1959 by State health departments. State health departments are required to submit annually a report of expenditure of funds for public health purposes, by source, which includes funds expended by local health units. (Costs for construction and general hospital and tuberculosis sanatoria care are excluded.) Expenditures were not reported for all organized units, and in some instances the data reported were unsatisfactory and were not included. Also, it was observed that the expenditures as reported were incomplete for some units. In total, data were either unavailable or unsatisfactory for 11 percent of the units. City health departments comprised the major portion of the units in the "no data" category. No information on amount of funds expended was available for 43 percent of the city units.

The expenditure data should be considered as representing less than the actual amount spent in reporting units. In some States, grants or subsidies and personnel and supplies, provided in full or in part by State health departments to local units, were not reported by the State on an individual unit basis, but were reported in total as a single expenditure item. In such cases, these amounts could not be included as expenditures of specific local units.

### Per Capita Income of Organized Areas

The increasing upward economic trend is reflected in table 7--Distribution of Health Organizations of Different Types, According to Per Capita Income. It will be noted that only 302 units as compared to 442 in 1958 had a per capita income of less than \$1,000. In contrast, each of the income interval groups from \$1,000 to \$3,000 showed an increase over 1958 in number of units. The number in the group \$3,000 to \$3,500 remained constant, and the number in the interval of \$3,500 and over was 4 less in 1960 than in 1958. No data were available for 55 reporting units.

The per capita income of nearly two-thirds of the reporting jurisdictions ranged between \$1,000 and \$2,000. This group comprised approximately 71 percent of the single county units, 65 percent of the local health districts, and 77 percent of the State health districts, but only about 48 percent of the city health departments. These areas serve more than 60 percent of the population.

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<sup>1/</sup> Sales Management, "Survey of Buying Power," May 10, 1959.

Table 7.--Distribution of Health Organizations of Different Types,  
According to Per Capita Income

Per capita income interval	Percent of population served	All organized areas				Type of health organization							
		Organizations		Counties included		Single county		City health department		Local health district		State health district	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals	<u>100.0</u>	<u>1,557</u>	<u>100.0</u>	<u>2,425</u>	<u>100.0</u>	<u>902</u>	<u>100.0</u>	<u>307</u>	<u>100.0</u>	<u>237</u>	<u>100.0</u>	<u>111</u>	<u>100.0</u>
No data	5.0	55	3.5	60	2.5	2	0.2	28	9.1	9	3.8	16	14.4
Under \$500	*	2	0.1	2	0.1	2	0.2	-	-	-	-	-	-
\$500 - \$1,000	5.7	300	19.3	461	19.0	225	25.0	-	-	69	29.1	6	5.4
\$1,000 - \$1,500	18.3	544	34.9	1,029	42.4	388	43.0	7	2.3	119	50.2	30	27.0
\$1,500 - \$2,000	42.5	479	30.8	811	33.5	250	27.7	139	45.3	34	14.4	56	50.5
\$2,000 - \$2,500	25.8	131	8.4	56	2.3	29	3.2	93	30.3	6	2.5	3	2.7
\$2,500 - \$3,000	2.3	31	2.0	6	0.2	6	0.7	25	8.1	-	-	-	-
\$3,000 - \$3,500	0.4	12	0.8	-	-	-	-	12	3.9	-	-	-	-
\$3,500 and over	*	3	0.2	-	-	-	-	3	1.0	-	-	-	-

\* Less than 0.05 percent.



Of the 1,502 units for which income data were available, only 177 had an average income exceeding \$2,000 per person. Since 133 of the city health departments were included in this total, the population represented in the groupings of \$2,000 or over was almost 29 percent of the total residing in the organized areas. In addition to the cities, 35 county units, 6 local health districts, and 3 State health districts comprised the total jurisdictions with a per capita income in excess of \$2,000 per person.

### Expenditures of Reporting Health Organizations

The reported expenditure of funds from different sources in each type of health organization is shown in table 8. It will be noted that expenditures of single county units constituted 43 percent and city health departments nearly 42 percent of the total funds expended. Thus 85 percent of all funds were expended in 76 percent of the units for which expenditures were reported. The distribution as to source of funds spent in these units was as follows: 79 percent of the total State funds, 88 percent of the local funds, and 67 percent of the Federal funds. Local and State health districts, which serve more than one-fourth of the population, expended only 15 percent of the total funds--21 percent of the State funds, 12 percent of the local funds, and 33 percent of the Federal funds.

Figure 3 shows the proportion of funds from each source--State, local and Federal--which comprised the overall expenditure of each type of organization. Approximately 70 percent of the total outlay of all organizations was reported as local funds; 24 percent as State funds; 6 percent as Federal funds. As compared to the expenditure data of two years ago, there has been a decrease in the proportion of funds expended from local sources and an increase in the State funds used to support local health services. Although the pattern of expenditures among the four types of organizations varied somewhat, the major portion of financial support came from local sources. Local funds accounted for about 74 percent of the expenditures in city health departments; 71 percent of the expenditures in single county units; 60 percent of the expenditures in local health districts; and only 46 percent of the expenditures in State health districts. In State health districts the ratio of Federal funds to total funds expended was higher than in any other type of unit.

Public health administrators have recognized for some time that \$2 to \$3 per person is currently required to provide local health services. However, expenditures reported in 1959 in local health units represented an average outlay of \$1.56 per person. (See table 9.) This figure was nearly 20 cents per capita greater than that of two years ago. Among the units in the 46 States reporting expenditure data--excluding the District of Columbia for which the expenditure per person amounted to \$6.36--the range in per capita expenditure for local health services varied from 34 cents per person served in Iowa to \$3.72 per person served in Alaska. In addition to Alaska, the States of California, Hawaii, Maryland, and New York spent in excess of \$2 per capita. The average per capita expenditure of funds, according to source, for the 46 States and the District of Columbia was as follows: State funds, 38 cents; local funds, \$1.09; and Federal funds, 9 cents.

Table 8.--Expenditures in Health Organizations, by Source of Funds  
and by Type of Organization

Type of organization	Total organizations for which expenditures were reported <sup>1/</sup>	Source of funds							
		Total funds		State		Local		Federal	
		Number	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Totals	<u>1,380</u>		<u>100.0</u>	<u>\$237,985,571</u>	<u>100.0</u>	<u>\$57,842,723</u>	<u>100.0</u>	<u>\$13,709,304</u>	<u>100.0</u>
Single county	876		63.5	102,178,838	42.9	22,973,967	39.7	6,261,702	45.7
City health department	176		12.8	98,908,188	41.6	22,519,864	38.9	2,931,791	21.4
Local health district	235		17.0	21,061,365	8.8	6,014,655	10.4	2,341,676	17.1
State health district	93		6.7	15,837,180	6.7	6,334,237	11.0	2,174,135	15.8

<sup>1/</sup> Expenditure information for 177 of the 1,557 reporting units was either unsatisfactory or unavailable.

Figure 3. PERCENT OF FUNDS EXPENDED FROM DIFFERENT SOURCES IN EACH TYPE OF

# HEALTH ORGANIZATION

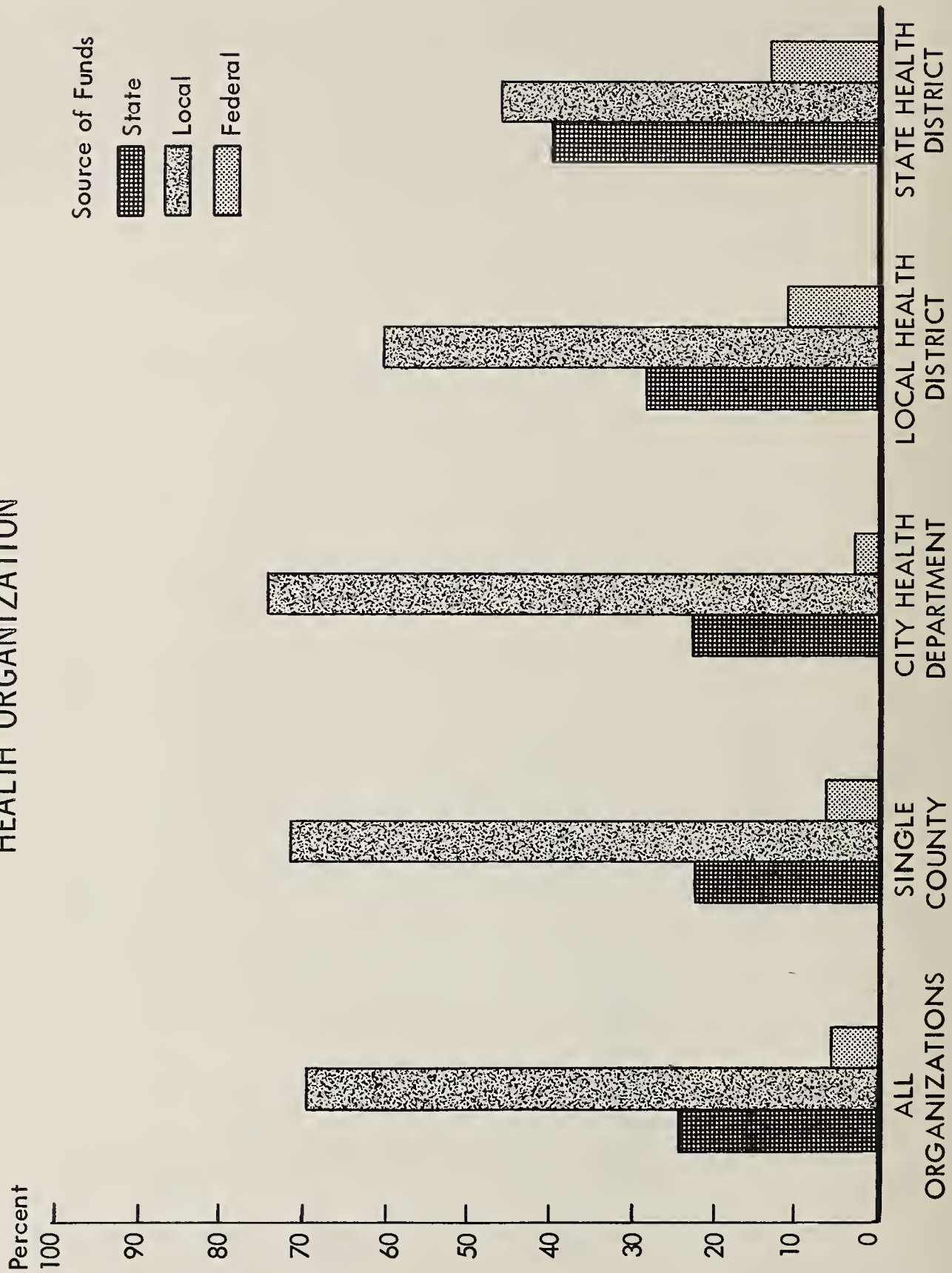




Table 9.--Amount of Funds Expended and Per Capita Expenditure of Funds, by Source,  
in all Types of Health Organizations in Each State

State	Number and population of units for which expenditures were reported				Funds expended, by source, and per capita expenditure					
	Number		Population		Total Funds		State		Local	
	1,380	67	153,028,409	3,193,000	Amount	Per capita	Amount	Per capita	Amount	Per capita
Totals	1,380	67	153,028,409	3,193,000	\$237,985,571	\$1.56	\$57,842,723	\$ .38	\$166,433,544	\$1.09
Alabama	67	3,193,000	3,193,000	3,193,000	3,218,882	1.01	387,961	.12	2,380,479	.75
Alaska	5	184,483	184,483	184,483	686,313	3.72	79,635	.43	60,160	.33
Arizona	6	1,061,588	1,061,588	1,061,588	1,096,316	1.03	107,641	.10	830,954	.78
Arkansas	27	1,600,294	1,600,294	1,600,294	1,096,373	.69	307,745	.19	660,142	.42
California	48	14,508,688	14,508,688	14,508,688	30,219,497	2.08	5,319,904	.37	23,841,770	1.64
Colorado	12	1,373,829	1,373,829	1,373,829	2,364,621	1.72	58,652	.04	2,211,292	1.61
Connecticut	13	1,129,792	1,129,792	1,129,792	2,010,210	1.78	282,591	.25	1,694,473	1.50
Delaware	4	454,000	454,000	454,000	283,802	.63	204,445	.45	-	-
Dist. of Columbia	1	840,000	840,000	840,000	5,341,474	6.36	4,694,013	5.59	-	-
Florida	40	4,424,278	4,424,278	4,424,278	6,803,689	1.54	1,972,062	.45	4,573,115	1.03
Georgia	33	3,830,000	3,830,000	3,830,000	7,040,330	1.84	2,133,987	.56	4,402,363	1.15
Hawaii	4	656,000	656,000	656,000	1,659,838	2.53	1,626,872	2.48	-	-
Idaho	5	1415,208	1415,208	1415,208	499,139	1.20	5,100	.01	299,866	.72
Illinois	32	7,652,487	7,652,487	7,652,487	9,379,404	1.23	878,081	.12	8,123,416	1.06
Indiana	17	4,188,924	4,188,924	4,188,924	2,603,883	.62	707,404	.17	1,770,641	.42
Iowa	8	2,343,585	2,343,585	2,343,585	805,926	.34	2,201	*	526,356	.22
Kansas	19	1,971,670	1,971,670	1,971,670	1,623,474	.82	211,605	.11	1,346,585	.68
Kentucky	120	3,015,517	3,015,517	3,015,517	3,368,616	1.12	1,505,798	.50	1,716,122	.57
Louisiana	63	3,144,032	3,144,032	3,144,032	3,872,360	1.23	735,078	.23	2,674,877	.85
Maine 1/	-	-	-	-	-	-	-	-	-	-
Maryland	24	3,031,000	3,031,000	3,031,000	7,030,013	2.32	1,767,786	.58	4,651,120	1.54
Massachusetts	11	2,666,737	2,666,737	2,666,737	2,329,391	.87	148,327	.06	1,979,511	.74
Michigan	42	7,215,381	7,215,381	7,215,381	10,223,486	1.42	357,980	.05	9,270,534	1.29
Minnesota	13	3,227,246	3,227,246	3,227,246	2,353,501	.73	228,812	.07	1,848,784	.57
Mississippi	38	2,185,000	2,185,000	2,185,000	2,484,466	1.14	645,217	.30	1,351,370	.62
Missouri	45	4,112,474	4,112,474	4,112,474	5,280,503	1.28	493,836	.12	4,325,493	1.05
Montana	4	137,999	137,999	137,999	252,253	1.83	5,276	.04	191,650	1.39
Nebraska	4	538,560	538,560	538,560	846,873	1.57	-	-	752,859	1.40
Nevada	2	201,781	201,781	201,781	146,191	.73	-	-	110,498	.55
New Hampshire 1/	-	-	-	-	-	-	-	-	-	-
New Jersey	76	5,900,670	5,900,670	5,900,670	10,493,552	1.78	876,589	.15	9,399,662	1.59
New Mexico	10	879,000	879,000	879,000	927,199	1.06	281,385	.32	542,071	.62
New York	42	16,495,000	16,495,000	16,495,000	39,880,837	2.42	19,987,539	1.21	19,546,276	1.19
North Carolina	80	4,530,000	4,530,000	4,530,000	6,755,948	1.49	1,294,135	.29	5,186,345	1.14
North Dakota	7	352,430	352,430	352,430	511,948	1.45	-	-	431,623	1.22
Ohio	66	8,123,141	8,123,141	8,123,141	13,711,193	1.69	1,424,778	.18	11,571,633	1.42
Oklahoma	48	1,888,232	1,888,232	1,888,232	1,727,741	.92	303,164	.16	1,243,107	.66
Oregon	17	1,510,521	1,510,521	1,510,521	2,433,909	1.61	-	-	2,254,604	1.49
Pennsylvania	12	9,091,146	9,091,146	9,091,146	11,803,654	1.30	2,587,642	.29	8,932,898	.98
Rhode Island 1/	-	-	-	-	-	-	-	-	-	-
South Carolina	46	2,136,313	2,136,313	2,136,313	2,619,415	1.23	1,157,813	.54	1,124,430	.53
South Dakota	2	118,753	118,753	118,753	105,750	.89	-	-	95,932	.81
Tennessee	64	3,451,931	3,451,931	3,451,931	3,993,453	1.16	1,055,971	.31	2,339,271	.68
Texas	51	6,608,561	6,608,561	6,608,561	8,334,140	1.26	493,316	.07	6,976,416	1.06
Texas	29	874,606	874,606	874,606	1,061,886	1.21	181,463	.21	763,733	.87
Utah	-	-	-	-	-	-	-	-	-	-
Vermont 2/	47	3,966,610	3,966,610	3,966,610	7,380,024	1.86	2,541,734	.64	4,289,837	1.08
Virginia	34	2,802,671	2,802,671	2,802,671	5,399,852	1.92	383,435	.14	4,886,429	1.74
Washington	31	1,789,174	1,789,174	1,789,174	1,383,244	.77	178,838	.10	1,139,199	.64
West Virginia	10	3,140,106	3,140,106	3,140,106	4,495,574	1.43	226,912	.07	4,077,815	1.30
Wisconsin	1	57,991	57,991	57,991	55,428	.96	-	-	37,833	.65
Wyoming	-	-	-	-	-	-	-	-	-	-

1/ Expenditure information unsatisfactory or unavailable.

2/ Vermont has no local health units recognized by the State health department.

\* Less than \$ .01.

A distribution of reporting organizations according to per capita expenditures is shown in table 10. It is significant to note that 55 percent of the reporting jurisdictions are almost evenly divided between the \$0.50 to \$1.00 interval and the \$1.00 to \$1.50 interval. These two groups include 68 percent of the single county units; over 60 percent of the local health districts; and only 30 and 21 percent of the State health districts and city units, respectively. A majority of the city health units expended more than \$1.50 per capita while many of the State health districts spent less than \$0.50 per capita. It should be pointed out that for nearly 43 percent of the city health departments unsatisfactory expenditure data or no data were reported. Units with expenditures ranging between \$0.50 and \$1.50 serve 40 percent of the population and include 51 percent of the counties served by organized health units.

The number of health departments spending in excess of \$1.50 per capita has continued to increase in the last few years. In 1959, 27.6 percent had a reported outlay of over \$1.50 per person in comparison to 21 percent in 1957. More than 40 percent of the population is now served by local units spending more than \$1.50 per person. On the other hand, about 12 percent of the population and 22 percent of the counties with organized health services were represented in the group spending less than 50 cents per person. Within this group were 43 percent of the State health districts. It is realized that the expenditures reported for State health districts in some States are extremely low because of variations in the administration and organization for State health services.

A comparison of expenditures from State, local, and Federal funds on a per capita basis has been made for each type of health unit in relation to the population size of the area served. (See table 11.) The per capita expenditure of funds from all sources for all types of organizations ranged from \$1.22 per person in units with populations of between 15,000 and 35,000 to \$1.98 in units with a population of more than 500,000. The second highest costs were reported in units serving less than 5,000 persons. As might be expected, per capita expenditures in all population intervals combined were higher for city health departments than for single county or local health district units. Expenditures for State health districts in the groups under 50,000 population were very high. The inclusion in 1960 of Alaska and Hawaii in the data accounts for the abrupt change from the data of two years ago. Expenditures per person in units serving small populations and in those serving large populations are generally greater than the per capita expenditures in the middle population groups.

Table 12 shows the distribution of health organizations in the various per capita income intervals according to the average amount spent per person in each jurisdiction for which expenditure data were available. This table reflects for all organizations combined a concentration of units in the per capita expenditure ranges of between \$0.80 and \$1.40, and the per capita income ranges of between \$500 to \$2,000 with a relatively small proportion of the units grouped in lower and higher intervals.



Table 10. --Distribution of Health Organizations of Different Types,  
According to Per Capita Expenditure

Per capita expenditure interval	Percent of population served	All organized areas				Type of health organization							
		Organization		Counties included		Single county		City health department		Local health district		State health district	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals	100.0	1,557	100.0	2,425	100.0	902	100.0	307	100.0	237	100.0	111	100.0
No data	8.0	171	11.0	121	5.0	26	2.9	131	42.7	2	0.8	12	10.8
Under \$0.50	11.5	97	6.2	542	22.3	29	3.2	7	2.3	13	5.5	48	43.3
\$0.50 - \$1.00	17.1	421	27.0	638	26.3	315	34.9	25	8.1	54	22.8	27	24.3
\$1.00 - \$1.50	23.1	439	28.2	603	24.9	302	33.5	41	13.4	90	38.0	6	5.4
\$1.50 - \$2.00	16.1	236	15.2	323	13.3	126	14.0	53	17.3	51	21.5	6	5.4
\$2.00 - \$2.50	10.0	103	6.6	122	5.0	61	6.8	21	6.8	16	6.8	5	4.5
\$2.50 - \$3.00	5.7	44	2.8	41	1.7	25	2.8	11	3.6	8	3.4	-	-
\$3.00 - \$3.50	6.6	21	1.4	17	0.7	9	1.0	11	3.6	1	0.4	-	-
\$3.50 - \$4.00	0.2	8	0.5	9	0.4	5	0.5	1	0.3	1	0.4	1	0.9
\$4.00 and over	1.7	17	1.1	9	0.4	4	0.4	6	1.9	1	0.4	6	5.4

Table 11.--Per Capita Expenditure of Health Organizations of Different Types, According to Population of the Jurisdiction Served and the Source of Funds Expended

Type of organization and source of funds	All intervals	Per capita expenditure, by population interval								
		Under 5,000	5,000- 15,000	15,000- 25,000	25,000- 35,000	35,000- 50,000	50,000- 100,000	100,000 250,000	250,000- 500,000	500,000 and over
ALL ORGANIZATIONS										
Total	\$ 1.56	\$ 1.78	\$ 1.54	\$ 1.22	\$ 1.22	\$ 1.28	\$ 1.28	\$ 1.36	\$ 1.28	\$ 1.98
State	.38	1.07	.64	.40	.40	.35	.35	.26	.22	.51
Local	1.09	.61	.78	.71	.69	.78	.80	1.00	.99	1.41
Federal	.09	.10	.12	.11	.13	.15	.13	.10	.07	.06
SINGLE COUNTY										
Total	\$ 1.49	\$ 1.78	\$ 1.34	\$ 1.06	\$ 1.15	\$ 1.27	\$ 1.27	\$ 1.45	\$ 1.60	\$ 1.85
State	.34	1.07	.66	.45	.35	.30	.33	.24	.34	.37
Local	1.06	.61	.58	.54	.60	.72	.83	1.10	1.18	1.42
Federal	.09	.10	.10	.11	.11	.13	.11	.11	.08	.06
CITY HEALTH DEPARTMENT										
Total	\$ 2.30	-	\$ 2.32	\$ 1.48	\$ 1.46	\$ 1.49	\$ 1.54	\$ 1.98	\$ 2.23	\$ 2.50
State	.52	-	.01	.01	.06	.05	.24	.28	.13	.69
Local	1.71	-	2.00	1.47	1.39	1.41	1.25	1.62	2.05	1.73
Federal	.07	-	.31	-	.01	.03	.05	.08	.05	.08
LOCAL HEALTH DISTRICT										
Total	\$ 1.36	-	\$ 5.74	\$ 1.82	\$ 1.45	\$ 1.35	\$ 1.17	\$ 1.42	\$ 1.22	\$ 2.79
State	.39	-	.76	.50	.59	.51	.39	.28	.03	.45
Local	.82	-	4.75	1.11	.74	.66	.64	.97	1.00	2.30
Federal	.15	-	.23	.21	.12	.18	.14	.17	.19	.04
STATE HEALTH DISTRICT										
Total	\$ .61	-	\$ 6.99	\$ 2.04	\$ 3.24	\$ 3.11	\$ 1.64	\$ .57	\$ .50	\$ .58
State	.25	-	6.78	1.02	1.67	1.48	.86	.25	.15	.24
Local	.28	-	.21	.82	.61	.48	.30	.25	.28	.30
Federal	.08	-	-	.20	.96	1.15	.48	.07	.07	.04

Table 12.--Number of Health Organizations of Different Types in Each Designated Per Capita Expenditure Interval, Grouped According to the Per Capita Income of the Jurisdiction

Type of organization and per capita income interval	Total organizations for which expenditures were reported	Number of organizations in each per capita expenditure grouping										
		Under \$0.20	\$0.20-0.40	\$0.40-0.60	\$0.60-0.80	\$0.80-1.00	\$1.00-1.20	\$1.20-1.40	\$1.40-1.60	\$1.60-1.80	\$1.80-2.00	\$2.00 and over
ALL ORGANIZATIONS	1,380	18	37	93	138	226	201	166	134	109	65	193
No data	31	2	3	2	-	2	1	3	1	3	1	13
Under \$ 500	296	-	-	-	-	1	1	-	-	-	-	-
\$ 500 - \$1,000	531	2	5	25	37	64	56	44	21	16	6	22
\$1,000 - \$1,500	376	12	11	40	66	95	91	56	59	38	18	55
\$1,500 - \$2,000	107	2	16	20	27	48	44	47	36	36	28	62
\$2,000 - \$2,500	26	-	2	4	7	10	5	9	16	10	9	33
\$2,500 - \$3,000	8	-	-	1	-	3	2	4	-	6	3	7
\$3,000 - \$3,500	3	-	-	1	1	2	-	2	1	-	-	1
\$3,500 and over	-	-	-	-	-	1	1	1	-	-	-	-
SINGLE COUNTY	876	1	10	62	102	169	152	97	87	56	36	104
No data	2	-	-	1	-	-	-	-	-	-	-	1
Under \$ 500	221	-	2	18	30	1	1	-	-	-	-	-
\$ 500 - \$1,000	380	-	5	34	48	82	47	29	19	9	4	15
\$1,000 - \$1,500	237	-	3	8	21	34	68	33	42	23	11	34
\$1,500 - \$2,000	28	1	-	1	3	3	34	34	24	22	17	40
\$2,000 - \$2,500	6	-	-	-	-	1	1	1	2	2	4	10
\$2,500 - \$3,000	-	-	-	-	-	-	-	-	-	-	-	4
\$3,000 - \$3,500	-	-	-	-	-	-	-	-	-	-	-	-
\$3,500 and over	-	-	-	-	-	-	-	-	-	-	-	-
CITY HEALTH DEPARTMENT	176	3	3	4	6	16	11	24	21	24	14	50
No data	8	-	-	-	-	1	-	1	-	3	-	3
Under \$ 500	-	-	-	-	-	-	-	-	-	-	-	-
\$ 500 - \$1,000	5	-	-	-	-	-	-	-	-	-	-	-
\$1,000 - \$1,500	61	2	2	-	3	4	5	8	7	6	6	18
\$1,500 - \$2,000	71	1	1	2	2	6	4	8	13	7	5	22
\$2,000 - \$2,500	20	-	-	1	-	2	1	4	-	6	3	3
\$2,500 - \$3,000	8	-	-	1	1	2	1	2	1	-	-	1
\$3,000 - \$3,500	3	-	-	-	-	1	1	1	-	-	-	-
\$3,500 and over	-	-	-	-	-	-	-	-	-	-	-	-
LOCAL HEALTH DISTRICT	235	-	4	11	22	30	35	43	25	23	15	27
No data	8	-	-	1	-	-	1	1	-	-	1	4
Under \$ 500	-	-	-	-	-	-	-	-	-	-	-	-
\$ 500 - \$1,000	69	-	3	7	7	15	9	14	2	5	2	5
\$1,000 - \$1,500	119	-	1	3	12	10	23	23	17	10	7	13
\$1,500 - \$2,000	33	-	-	-	1	4	2	5	5	7	5	4
\$2,000 - \$2,500	6	-	-	-	2	1	-	-	1	1	-	1
\$2,500 - \$3,000	-	-	-	-	-	-	-	-	-	-	-	-
\$3,000 - \$3,500	-	-	-	-	-	-	-	-	-	-	-	-
\$3,500 and over	-	-	-	-	-	-	-	-	-	-	-	-
STATE HEALTH DISTRICT	93	14	20	16	8	11	3	2	1	6	-	12
No data	13	2	3	-	-	1	-	1	1	-	-	5
Under \$ 500	-	-	-	-	-	-	-	-	-	-	-	-
\$ 500 - \$1,000	6	-	-	-	-	1	-	1	-	2	-	2
\$1,000 - \$1,500	27	2	5	3	6	3	-	-	-	3	-	5
\$1,500 - \$2,000	45	10	11	12	2	6	3	-	-	1	-	5
\$2,000 - \$2,500	2	-	1	1	-	-	3	-	-	-	-	-
\$2,500 - \$3,000	-	-	-	-	-	-	-	-	-	-	-	-
\$3,000 - \$3,500	-	-	-	-	-	-	-	-	-	-	-	-
\$3,500 and over	-	-	-	-	-	-	-	-	-	-	-	-

\* No organization served an area with a per capita income of \$2,500 and over.



## PERSONNEL ENGAGED IN LOCAL PUBLIC HEALTH PROGRAMS

Full-time employees of all governmental agencies engaged in local public health services numbered 55,464 as of January 1, 1960, according to the reports submitted. Of this number 44,007 were employed by organized local health units, 11,457 were employed in these same areas by other governmental agencies, and 398 were employed by local governmental units in areas not having an organized local health unit. These agencies included local health organizations--units, departments, boards, and commissions of health--and other governmental agencies such as boards of education and welfare departments which engage in local public health work. Included also in the total are 533 public health nurses employed by voluntary agencies and working full time under contract for official health agencies. No other personnel data are requested for nonofficial agencies.

The majority of the workers (44,007) were employees of official health agencies and data concerning them are presented first. (See table 13.) Employees of other official agencies are shown in table 32.

### Personnel Employed by Official Health Agencies

#### Distribution of Personnel Among States

The number of full-time employees of official health agencies totaled 44,007, including 533 nurses in voluntary agencies working full time under contract for health departments. The total health department personnel reported in the current reports constituted an increase of 2,283 workers over the report of January 1, 1958, or over 5 percent. Part of this increase is the result of an increase in the number of local health units reporting and the inclusion of data for local units in Alaska and Hawaii in 1960 for the first time. Larger State totals were reflected in summary reports covering units in 39 States; decreases were indicated in the totals for 10 States. State increases ranged from 1 to 390 employees, with Florida accounting for the largest increase. On the other hand, decreases ranged from 1 to 531. The largest decrease was in New York State and reflected a correction in reporting for New York City. Previously, this jurisdiction reported on the basis of budgeted positions, but for 1960 only personnel actually employed as of the reporting date were included.

Seventy-one percent of the total workers were reported by local official health agencies of 15 States. Each of these States had more than 1,000 full-time employees providing local health services through organized local health units. The States were: California, Florida, Georgia, Illinois, Maryland, Massachusetts, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Texas, and Virginia. On the other hand, Vermont had no local health units so reported no local employees. In 7 other States less than 100 full-time workers were employed by organized health departments.

Table 13.--Number of Full-Time Personnel of Different Classifications Employed by Official Health Agencies  
in Local Areas Organized for Local Health Services  
January 1, 1960

States	Total	Public Health Physicians	Public Health Nurses	Clinic Nurses	Dental Hygienists	Engineers	Professional Sanitarians	Other Sanitation Personnel	Veterinarians	Laboratory Personnel	Health Educators	Nutritionists	Medical Social Workers	Psychiatric Social Workers	Psychologists	Analysts and Statisticians	Public Health Investigators	X-ray Technicians	Physical Therapists	Administrative Management Personnel	Clerks	Maintenance and Service Personnel	All others	
Totals	44,007	1,402	14,384	647	395	446	6,112	2,433	245	1,489	281	136	228	189	104	217	393	355	158	509	9,878	1,839	1,858	
Alabama	700	29	195	-	1	4	60	121	6	18	3	1	-	9	2	2	8	2	-	3	165	42	28	
Alaska	152	4	58	-	-	2	16	-	-	8	2	-	4	4	3	1	-	2	-	4	42	11	1	
Arizona	212	8	63	12	-	2	53	-	1	-	1	-	-	-	-	-	3	7	-	2	48	11	-	
Arkansas	269	6	101	3	-	1	53	3	1	2	1	1	-	-	-	-	3	-	-	2	48	11	-	
California	4,637	206	1,273	203	12	17	768	103	8	196	60	16	39	28	11	75	62	48	39	41	86	3	-	
Colorado	444	10	185	4	-	3	94	11	4	13	4	-	2	2	1	1	1	1	-	4	1,135	147	134	
Connecticut	441	21	205	3	28	3	46	17	2	19	2	-	1	3	4	2	-	4	1	5	75	4	3	
Delaware	121	3	51	-	4	-	23	-	-	3	-	-	-	-	-	-	-	-	-	2	-	-	1	
Dist. of Col.	802	37	184	9	21	6	6	38	9	26	2	1	49	9	11	6	9	7	8	14	202	95	41	
Florida	1,532	58	517	17	3	14	160	212	3	6	8	3	2	24	17	2	17	12	-	7	296	48	97	
Georgia	1,426	41	517	38	5	28	175	42	7	16	3	1	3	7	5	3	14	14	-	8	332	80	80	
Hawaii	389	7	93	-	-	3	92	-	-	17	-	1	3	5	4	1	1	3	3	1	69	23	62	
Idaho	90	48	48	2	-	-	13	4	-	-	-	-	1	-	-	-	-	-	-	-	17	2	1	
Illinois	1,830	48	622	31	-	26	48	202	7	83	15	11	24	9	2	6	41	7	1	11	363	146	69	
Indiana	662	8	232	1	-	12	81	147	3	12	5	7	-	-	-	2	5	2	-	2	110	14	19	
Iowa	190	2	89	-	-	11	34	14	-	7	1	-	-	-	-	2	2	-	-	1	23	4	-	
Kansas	291	9	97	4	-	9	71	3	2	5	2	6	-	2	-	-	2	2	-	1	64	9	8	
Kentucky	768	31	260	-	2	1	141	37	-	7	6	-	-	-	-	-	2	4	-	30	207	19	12	
Louisiana	888	27	235	4	1	-	194	25	5	3	4	1	-	-	-	-	13	14	-	2	243	91	26	
Maine	139	5	66	-	5	4	18	2	-	1	2	2	2	1	3	-	1	1	-	1	22	6	2	
Maryland	1,207	43	493	17	3	8	147	22	6	39	5	2	4	7	8	6	6	9	4	16	269	32	57	
Massachusetts	1,300	27	514	17	59	16	176	62	1	41	9	7	13	1	-	2	6	10	10	37	211	42	13	
Michigan	1,731	51	556	23	15	16	142	189	29	61	14	5	1	3	-	11	13	21	-	13	446	19	88	
Minnesota	477	14	204	3	6	7	62	17	1	8	2	1	3	-	1	1	1	-	-	3	126	9	8	
Mississippi	660	33	244	-	-	-	100	-	1	5	1	5	6	-	-	-	24	1	-	-	161	82	8	
Missouri	1,086	27	246	14	3	29	124	158	8	41	11	-	-	15	3	-	10	14	2	15	261	49	39	
Montana	45	4	26	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	
Nebraska	129	2	39	2	-	3	31	-	-	9	3	-	-	-	-	2	1	-	-	1	25	2	6	
Nevada	30	2	9	1	-	-	8	-	-	-	-	-	-	-	-	-	1	-	-	-	7	1	-	
New Hampshire	44	2	15	-	-	-	9	3	1	3	-	-	-	-	-	-	35	-	-	4	7	-	-	
New Jersey	1,549	9	606	9	11	7	221	91	6	64	5	4	6	1	-	13	35	4	1	84	268	59	39	
New Mexico	195	10	75	3	-	-	34	2	-	-	-	-	1	1	-	-	6	2	-	-	57	3	1	
New York	6,338	150	1,708	35	181	81	489	346	22	358	41	29	30	3	4	40	5	70	74	104	1,544	368	620	
North Carolina	1,338	66	514	19	-	7	221	18	6	30	10	3	4	22	6	1	14	8	2	1	287	62	30	
North Dakota	83	1	45	-	-	1	19	2	-	2	-	3	-	-	-	5	8	5	-	1	11	1	-	
Ohio	2,233	94	772	22	1	2	485	121	54	54	9	-	3	-	1	5	1	1	-	18	468	37	38	
Oklahoma	385	10	148	12	-	1	103	-	-	9	1	-	3	-	1	-	1	1	-	-	84	9	6	
Oregon	381	21	151	12	3	83	56	13	3	6	2	-	2	5	4	-	22	3	2	5	76	10	9	
Pennsylvania	2,184	45	643	42	24	-	303	67	15	60	18	10	10	5	-	12	-	18	2	28	609	70	86	
Rhode Island	141	5	51	-	2	-	13	15	-	5	-	-	-	-	-	2	-	1	2	1	25	3	16	
South Carolina	570	24	204	13	2	3	118	12	3	10	1	-	-	-	-	1	9	6	-	4	131	20	7	
South Dakota	22	-	7	-	2	1	6	-	-	3	-	-	-	-	-	-	7	-	-	-	4	-	1	
Tennessee	695	32	275	8	1	4	113	-	-	22	3	2	1	-	-	1	7	8	-	2	162	27	20	
Texas	1,704	45	366	30	4	18	339	165	20	85	7	3	4	7	4	7	22	12	2	7	314	99	141	
Utah	218	3	118	12	-	-	47	1	1	3	1	-	-	2	-	-	-	1	-	4	23	1	-	
Vermont	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Virginia	1,163	50	400	8	10	-	259	50	1	42	4	-	3	10	1	1	11	11	2	8	251	40	6	
Washington	813	27	302	27	1	2	153	28	3	39	4	2	5	10	-	4	4	15	2	3	159	19	11	
West Virginia	307	8	121	2	-	-	83	-	-	3	-	-	2	-	-	-	2	1	-	2	74	5	1	
Wisconsin	986	35	438	-	12	13	96	66	5	45	8	5	-	5	4	2	-	4	-	8	202	20	14	
Wyoming	7	-	3	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	

1/ Includes 533 public health nurses employed by voluntary agencies who are under contract to provide service to the official health agency.  
\* Vermont has no local units recognized by the State health department.



These 7 States employed 321 persons or 7 percent of the total full-time employees of local health units. Except for New Hampshire, all of these States were in the Great Plains and mountain areas and have very few organized local health units; Wyoming had only 1 unit reporting, South Dakota 2, North Dakota 7, Nevada 2, Montana 4, and Idaho 6.

Professional and technical personnel represented approximately 72 percent of the total public health workers employed by organized health units. Public health nurses numbered 14,384 and constituted about one-third of the personnel employed by official health agencies. In addition, there were 647 clinic nurses reported. These nurses are professional registered nurses who devote full time to clinical activities in local health units. Despite the continued overall increase in full-time staff, physicians continued on a downward trend with 12 fewer reported than in the previous report. In 23 States, fewer physicians were employed in local units than were reported in 1958. In many areas, a decrease in the number of physicians employed means an increase in the number of health units with health officer vacancies.

Sanitation personnel, which constituted approximately one-fifth of the overall staff of reporting health departments, comprised the second largest group of professional and technical public health workers in local areas. Within the general category of sanitation workers there are included engineers, professionally trained sanitarians, nongraduate personnel engaged in general sanitation activities, and veterinarians. Engineers totaled 446, or 71 more than the number reported two years ago. Local units in 36 States employed engineers. The 6,112 professional sanitarians, which comprised the largest proportion of sanitation workers, were distributed among all States. This figure represents an increase of 753 over the number reported for 1958. Second in size was the "other sanitation personnel" group which totaled 2,433. Veterinarians had a comparatively small representation on the staff of most local health departments; only 245 were reported employed by local units in 32 States. It is indicated that the general level of training among personnel engaged in sanitation activities has been raised somewhat when compared to data reported as of January 1, 1958. While some inconsistent reporting still prevails between the categories of professionally trained sanitarians and "other sanitation personnel," the increased use of engineers and the rather marked increase in the number of professionally trained sanitarians indicates movement in the direction of better trained sanitation personnel in local units.

The number of laboratory workers serving local areas increased from 1,323 to 1,489 during the last two years, or 12.5 percent. There were six States in which no laboratory workers were employed locally. State laboratories through either headquarters or branch laboratories provide services to many local areas, including areas which employ laboratory personnel. Frequently, locally provided service consists mainly of performing the more simple, routine procedures, while the more unusual and complicated procedures are performed by State laboratories.

Other professional and technical personnel of various types employed full time on local health department staffs were relatively small in number.



It will be noted from table 13 that the 309 full-time dentists reported were employed in 30 States. Dental hygienists totaled 395 and were reported by 27 States; the State of New York accounted for about 46 percent of these workers. The number of other specialized personnel reported such as health educators, nutritionists, medical and psychiatric social workers, psychologists, and physical therapists, remained low and were concentrated in relatively few units. For several of these groups significant increases were reflected in the number employed in 1960 as compared to data reported previously.

#### Distribution of Personnel by Type of Local Health Organization

The distribution of the 44,007 full-time employees of official health agencies among the four types of health organizations is shown in table 14, by type of employee. County health departments reported 18,030 workers, or 41 percent of the total employees of official health agencies. Second to county units were city units which reported a personnel complement of 17,295 employees, or approximately 39 percent of the total personnel employed by all types of health organizations. Thus, 80 percent of the full-time workers are employed in health jurisdictions which include more than 70 percent of the population of organized areas. Employees of local health districts and State health districts represented a small proportion of the overall personnel count; however, both types of organizations employed more workers in 1960 than in 1958. Together, these groups employed 20 percent of the total full-time staff serving in local health areas. However, these units comprise over 62 percent of all the counties covered by organized health departments.

For individual personnel categories, the proportion of workers employed by each type of organization varied widely. Single county organizations employed the highest percentage of the following professional and technical personnel: Public health physicians, nurses, professional sanitarians, health educators, psychiatric social workers, psychologists, and physical therapists. For all groups other than engineers and those mentioned above, city health departments had the largest proportion of workers. The highest proportion of engineers were employed by State health districts. Professional and technical personnel who had a much higher representation in city health departments than in other types of health organizations included dental hygienists, public health dentists, medical social workers, analysts and statisticians, veterinarians, laboratory personnel, and nutritionists.

Generally, the personnel distribution data reflect that health organizations serving larger populations employ a much wider range of specialized personnel than those serving sparsely populated areas. For the most part, any specialized personnel serving the latter areas are available on a part-time basis only.

Except for cities, all types of health units showed gains in personnel within the two-year period. Single county health organizations gained 1,619 employees; local health districts gained 200; and State health districts gained 661. Personnel employed in city health departments as of January 1,

Table 14.--Full-Time Personnel of Different Classifications Employed by Official Health Agencies, Arranged by Type of Local Health Organization  
January 1, 1960

Type of personnel	Total official health agency personnel	Number of personnel by type of organization			
		Single county	City health department	Local health district	State health district
All types	<u>44,007<sup>1/</sup></u>	<u>18,030</u>	<u>17,295</u>	<u>4,108</u>	<u>4,574</u>
Public health physicians	1,402	691	436	185	90
Public health dentists	309	91	187	16	15
Dental hygienists	395	62	295	7	31
Public health nurses	<u>14,384<sup>1/</sup></u>	<u>6,297</u>	<u>4,419</u>	<u>1,580</u>	<u>2,088</u>
Clinic nurses	647	317	272	51	7
Sanitation personnel:					
Engineers	446	152	86	29	179
Veterinarians	245	73	146	14	12
Professional sanitarians	6,112	2,684	2,186	682	560
Other	2,433	918	1,217	122	176
Laboratory personnel	1,489	467	936	45	41
Health educators	281	129	109	10	33
Nutritionists	136	43	58	1	34
Medical social workers	228	68	124	6	30
Psychiatric social workers	189	119	35	18	17
Psychologists	104	51	28	10	15
Analysts and statisticians	217	88	121	5	3
Public health investigators	393	151	171	27	44
X-ray technicians	355	148	170	20	17
Physical therapists	158	79	35	6	38
Administrative management	509	144	316	18	31
Fiscal and clerical	9,878	4,118	3,867	966	927
Maintenance, custodial, and service	<u>1,839</u>	<u>662</u>	<u>942</u>	<u>181</u>	<u>54</u>
Others:					
Medical aides and assistants	807	116	655	35	1
Technicians and therapists	288	109	116	4	59
(other than identified above)					
Practical nurses	123	42	70	2	9
All others	<u>640</u>	<u>211</u>	<u>298</u>	<u>68</u>	<u>63</u>

<sup>1/</sup> Includes 533 public health nurses, employed by voluntary agencies, under contract to provide service to official health agencies.



1960, showed a loss of 197; this loss was partially the result of the change in reporting for New York City which has already been mentioned.

### Personnel-Population Ratios - Full-Time Staff

For several years analyses of personnel-population ratios have been included in this report. Such data serve as a basis for measuring the progress in staffing local units to provide local health services. Basically, they indicate whether the total staff, and more importantly, whether the professional and technical personnel are keeping pace with the ever expanding population. Absolute increases do not necessarily indicate that units are better staffed to provide services because of the continuous growth in population to be served. It is hoped that the ratios available over the years for various types of reporting health organizations will be helpful in developing staffing patterns for local health units, based upon the type of organization and the characteristics of the population and area to be served. This section is confined to full-time employees, but the contribution of part-time employees in staffing local health units is considered in a subsequent part of the report.

Data for 1960 when compared to those for 1958 indicate that no significant gains in personnel-population ratios have been made in the last two years. On the other hand, no appreciable loss is indicated. At least the downward trend, which continued for several years, has been checked. During the last two years, personnel-population ratios have remained relatively constant. There was a slight reduction in the physician, nurse, and dental hygienist ratios, and a slight gain in ratios for sanitation, laboratory, and clerical personnel. Except for city health units the overall personnel-population ratio for each type of organization was higher than two years ago. The ratio for city units continues to be much higher than for the other types of units.

The ratio of full-time workers employed by all types of health departments was 26.3 per 100,000 population in 1960 as compared to 26.2 in 1958 and 31.3 in 1950. The physician-population ratio dropped to 0.8 as compared to 0.9 in 1958 and 1.5 in 1950. Comparable ratios for nurses and sanitation personnel were as follows: Nurses, 8.6 as compared to 8.8 in 1958 and 10.4 in 1950; sanitation personnel, 5.5 as compared to 5.3 in 1958 and 6.5 in 1950. Although personnel-population ratios continued at about the same level during the past two years, they remain far below the level achieved in 1950.

In city health departments, the personnel-population ratio was considerably higher than the national figure, the ratio being 34.7 workers per 100,000 population. On the other hand, the ratio for single county units--25.9--was below the national average. For local health districts the ratio was 26.3 per 100,000, while the State health districts reported only 14.3 workers per 100,000 population. Each of these last three groups showed a slight increase over data reported in 1958. (See table 15.) The low personnel-population ratio for State health districts is of particular concern because such districts usually cover large geographical areas, thus requiring considerable travel time to provide service to the population residing in these areas.



Table 15.--Ratio of Official Health Agency Personnel (All Types) to Population Covered by Reporting Health Organizations of Different Types  
January 1, 1960

Type of personnel	All types	Number of workers per 100,000 population covered by designated types of organizations			
		Single county	City health department	Local health district	State health district
All types	<u>26.3</u> <sup>1/</sup>	<u>25.9</u>	<u>34.7</u>	<u>26.3</u>	<u>14.3</u>
Public health physicians	0.8	1.0	0.9	1.2	0.3
Public health dentists	0.2	0.1	0.4	0.1	*
Dental hygienists	0.2	0.1	0.6	0.1	0.1
Public health nurses	<u>8.6</u> <sup>1/</sup>	9.0	8.9	10.1	6.5
Clinic nurses	0.4	0.5	0.5	0.3	*
Sanitation personnel:	5.5	5.5	7.3	5.4	2.9
Engineers	(6.3)	(0.2)	(0.2)	(0.2)	(0.6)
Veterinarians	(0.1)	(0.1)	(0.3)	(0.1)	(0.0)
Professional sanitarians	(3.7)	(3.9)	(4.4)	(4.3)	(1.8)
Other	(1.4)	(1.3)	(2.4)	(0.8)	(0.5)
Laboratory personnel	0.9	0.7	1.9	0.3	0.1
Health educators	0.2	0.2	0.2	0.1	0.1
Nutritionists	0.1	0.1	0.1	*	0.1
Medical social workers	0.1	0.1	0.3	*	0.1
Psychiatric social workers	0.1	0.2	0.1	0.1	0.1
Psychologists	0.1	0.1	0.1	0.1	*
Analysts and statisticians	0.1	0.1	0.2	*	*
Public health investigators	0.2	0.2	0.3	0.2	0.1
X-ray technicians	0.2	0.2	0.3	0.1	0.1
Physical therapists	0.1	0.1	0.1	*	0.1
Administrative management	0.3	0.2	0.6	0.1	0.1
Fiscal and clerical	5.9	5.9	7.8	6.2	2.9
Maintenance, custodial, and service	1.1	0.9	1.9	1.2	0.2
Others:					
Medical aides and assistants	0.5	0.2	1.3	0.2	*
Technicians and therapists	0.2	0.1	0.2	*	0.2
(other than identified above)					
Practical nurses	0.1	0.1	0.1	*	*
All others	0.4	0.3	0.6	0.4	0.2

<sup>1/</sup> Includes 533 public health nurses, employed by voluntary agencies, under contract to provide service to official health agencies.

\* Less than 0.05. In each column where more than one asterisk (\*) is shown, these items total to 0.1.

## Full-Time Professional and Technical Personnel-Population Ratios

It is recognized that modern public health programs require the services of an increasing number of specialized personnel. For this reason, a more detailed analysis of professional and technical personnel available in local areas has been made. In the following tables, the 9,878 clerical workers, the 1,839 maintenance, custodial, and service workers, and the 640 employees included in table 14 under "all others" have been excluded.

When the personnel-population ratios for the professional and technical staff of the four types of organizations were compared to those for the entire staff, they were found to be considerably lower. For example, the ratio of professional and technical personnel to population was 18.9 as compared to a ratio of 26.3 per 100,000 population for all employees. In comparison to data for 1958, the ratios for professional and technical personnel remained almost constant in the two-year period in single county units, while there was increase from 17.3 to 18.5 in local health districts and an increase from 9.8 to 11.1 in State health districts. On the other hand, the professional and technical personnel ratio for city health departments decreased from 25.9 to 24.4 per 100,000 population.

## Personnel Ratios According to Population Size of Health Jurisdictions

Relation of health department full-time professional and technical personnel to population of the community served indicates that the ratio per 100,000 population was highest in 1960 for units serving less than 5,000 population, the rate being 23.8 as compared to the average of 18.9. (See table 16.) The employment of a full-time basic professional staff of health officer, nurse, and sanitarian, in the units with very small populations results in the high ratio. The next highest ratio was in units serving more than 500,000 persons; however, the ratio for these units in 1960 was 20.9 as compared to 21.7 two years ago.

The highest personnel-population ratio for single county units was found in those units serving populations of less than 5,000, with the next highest ratio in the group above 500,000 population. The ratio for the first group was 23.8 and for the latter 21.2 employees per 100,000 population. City health departments serving between 250,000 and 500,000 population continued to have the highest personnel ratio of all city units, the rate being 29.2 workers per 100,000 persons as compared to the average of 24.4 for all city units. The ratio for each population interval exceeding 100,000 population was higher than the average rate of 24.4 for all reporting city health departments.

For local health districts the personnel ratios per 100,000 population were highest in units serving 5,000 to 15,000 persons. These data give further evidence that the employment of a full-time basic health department staff to serve sparsely populated areas results in abnormally high personnel-population ratios. While the service potential is greater in these areas, the cost of operation generally is much higher. Personnel ratios were highest for State health districts in units serving 35,000 to 50,000 persons, the ratio being 43.9.

Table 16.--Number of Professional and Technical Personnel Employed Full Time by Official Health Agencies  
and Ratio of Personnel per 100,000 Population Covered by Health Organizations of Different Types,  
According to Population of the Jurisdiction Served  
January 1, 1960

Population interval	All types of organizations		Single county		City health department		Local health district		State health district	
	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio
Totals	<u>31,650</u>	<u>18.9</u>	<u>13,039</u>	<u>18.7</u>	<u>12,188</u>	<u>24.4</u>	<u>2,893</u>	<u>18.5</u>	<u>3,530</u>	<u>11.1</u>
Under 5,000	13	23.8	13	23.8	-	-	-	-	-	-
5,000 - 15,000	395	19.6	302	18.2	69	23.7	20	39.0	4	40.8
15,000 - 25,000	664	15.6	448	14.9	134	15.0	76	23.2	6	30.5
25,000 - 35,000	816	15.9	458	13.8	174	18.3	139	18.7	45	36.8
35,000 - 50,000	1,798	17.5	858	15.3	429	20.0	430	18.3	81	43.9
50,000 - 100,000	4,623	17.9	2,089	17.5	1,100	20.7	1,211	15.9	223	24.0
100,000 - 250,000	6,069	18.7	2,787	19.0	1,798	25.4	761	20.4	723	10.3
250,000 - 500,000	4,690	17.4	2,123	19.8	1,424	29.2	48	16.6	1,095	9.9
500,000 and over	12,582	20.9	3,961	21.2	7,060	24.9	208	37.5	1,353	10.8



Table 17 shows the number of reporting organizations of all types, according to population size, within various personnel-population ratio ranges. About 68 percent of the 1,557 reporting units employed less than 20 full-time professional and technical workers per 100,000 as compared to about 70 percent of the units reporting in 1958. On the other hand, slightly more than 10 percent of the reporting units employed more than 30 full-time professional and technical employees per 100,000 population as compared to less than 10 percent of the units in this category two years ago.

#### Personnel Ratios According to Per Capita Income of Health Jurisdictions

When professional and technical workers were related to the per capita income of the area served, the rate of workers employed per 100,000 population was highest for all types of units when the average per capita income was between \$2,500 and \$3,000, the rate being 25.3. This ratio is slightly higher than that of two years ago. At that time, all units with per capita incomes of between \$2,000 and \$3,000 had the same ratio, while as of January 1960, the ratio for units with incomes of \$2,000 to \$2,500 showed a decrease from 24.7 to 23.7 employees per 100,000 persons served. About 36 percent of the official health agency employees were engaged in public health work in areas with per capita incomes above \$2,000. An additional 40 percent of the workers were employed in areas with per capita incomes between \$1,500 and \$2,000. (See table 18.) In city health departments, areas with incomes of \$1,000 to \$1,500 employed the highest ratio of personnel, while in State health districts the highest ratio fell in areas with incomes of \$500 to \$1,000.

Table 19 gives a distribution of organizations according to the per capita income interval of the unit and professional and technical personnel ratios. This table indicates there has been a slight shift toward higher ratios of professional and technical personnel as the per capita income of units has increased.

#### Personnel Ratios According to Per Capita Expenditure of Health Organizations

The relationship of personnel employed to funds expended, on a per capita basis, in local health organizations of all types usually reflects increased personnel rates as the expenditure rates increase. (See table 20.) Data for 1960 when compared to those for 1958 reveal that the ratios for practically all expenditure intervals are appreciably less than they were two years ago. This indicates that increased salaries paid to public health workers necessitate increases in per capita expenditures to maintain personnel-population ratios at acceptable levels and consistent with provision of needed services. In units spending less than 50 cents per capita for local health services, the personnel-population ratio was 9.1 per 100,000

Table 17.--Number of Health Organizations within Specified Population Sizes, Grouped According to Ratio of Full-Time Official Health Agency Professional and Technical Personnel per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organizations	Number of organizations in each population interval								
		Under 5,000	5,000- 15,000	15,000- 25,000	25,000- 35,000	35,000- 50,000	50,000- 100,000	100,000- 250,000	250,000- 500,000	500,000 and over
Totals	<u>1,557</u>	<u>17</u>	<u>189</u>	<u>214</u>	<u>173</u>	<u>242</u>	<u>375</u>	<u>213</u>	<u>77</u>	<u>57</u>
No data	-	-	-	-	-	-	-	-	-	-
Under 5	43	6	8	5	3	2	6	7	6	-
5 - 10	208	1	10	37	33	32	46	27	13	9
10 - 15	425	-	38	71	54	75	107	50	16	14
15 - 20	377	-	47	52	47	63	95	48	17	8
20 - 25	229	2	34	24	9	37	63	41	10	9
25 - 30	117	2	15	9	14	17	27	17	8	8
30 - 35	76	3	10	10	6	8	18	15	2	4
35 - 40	36	-	11	3	2	1	11	3	2	3
40 - 45	14	1	5	1	1	1	-	2	2	1
45 - 50	6	1	1	-	1	1	-	1	1	-
50 and over	26	1	10	2	3	5	2	2	-	1

Table 18.--Number of Professional and Technical Personnel Employed Full Time by Official Health Agencies  
and Ratio of Personnel per 100,000 Population Covered by Reporting Local Health Organizations  
of Different Types, According to Per Capita Income of the Jurisdiction Served  
January 1, 1960

Per capita income interval	All types of organizations		Single county		City health department		Local health district		State health district	
	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio
Totals	<u>31,650</u>	<u>18.9</u>	<u>13,039</u>	<u>18.7</u>	<u>12,188</u>	<u>24.4</u>	<u>2,893</u>	<u>18.5</u>	<u>3,530</u>	<u>11.1</u>
No data	1,187	14.2	315	13.0	105	22.6	84	21.4	683	13.4
Under \$ 500	3	16.4	3	16.4	-	-	-	-	-	-
\$ 500 - \$1,000	1,462	15.3	822	14.7	-	-	543	15.9	97	18.8
\$1,000 - \$1,500	4,950	16.2	2,735	16.8	202	29.2	1,365	17.7	648	11.2
\$1,500 - \$2,000	12,719	17.9	6,175	18.8	3,843	23.8	744	22.3	1,957	10.4
\$2,000 - \$2,500	10,197	23.7	2,217	22.8	7,678	24.9	157	20.1	145	8.6
\$2,500 - \$3,000	995	25.3	772	27.2	223	20.3	-	-	-	-
\$3,000 - \$3,500	132	21.2	-	-	132	21.2	-	-	-	-
\$3,500 and over	5	8.8	-	-	5	8.8	-	-	-	-



Table 19.--Number of Health Organizations within Specified Per Capita Income Intervals, Grouped According to Ratio of Full-Time Official Health Agency Professional and Technical Personnel per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organizations	Number of organizations in each per capita income interval								
		No data	Under \$500	\$ 500- 1,000	\$1,000- 1,500	\$1,500- 2,000	\$2,000- 2,500	\$2,500- 3,000	\$3,000- 3,500	\$3,500 & over
Totals	1,557	55	2	300	544	479	131	31	12	3
No data	-	-	-	-	-	-	-	-	-	-
Under 5	43	3	-	8	13	16	2	-	1	-
5 - 10	208	7	-	45	73	58	18	3	2	2
10 - 15	425	14	1	92	169	113	24	7	4	1
15 - 20	377	7	-	73	142	123	21	11	-	-
20 - 25	229	9	1	47	61	82	24	3	2	-
25 - 30	117	2	-	18	38	36	20	3	-	-
30 - 35	76	1	-	7	26	27	12	2	1	-
35 - 40	36	3	-	4	7	18	4	-	-	-
40 - 45	14	2	-	2	4	3	-	2	1	-
45 - 50	6	1	-	1	2	-	2	-	-	-
50 and over	26	6	-	3	9	3	4	-	1	-

Table 20.--Number of Professional and Technical Personnel Employed Full Time by Official Health Agencies and Ratio of Personnel per 100,000 Population Covered by Reporting Local Health Organizations of Different Types, According to Per Capita Expenditure of the Jurisdiction Served January 1, 1960

Per capita expenditure interval	All types of organizations		Single county		City health department		Local health district		State health district	
	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio	Number of personnel	Ratio
Totals	<u>31,650</u>	<u>18.9</u>	<u>13,039</u>	<u>18.7</u>	<u>12,188</u>	<u>24.4</u>	<u>2,893</u>	<u>18.5</u>	<u>3,530</u>	<u>11.1</u>
No data	2,031	15.2	154	14.3	1,312	19.1	16	15.5	549	10.4
Under \$0.50	1,759	9.1	105	7.3	202	31.8	53	6.6	1,399	8.5
\$0.50 - \$1.00	3,522	12.3	2,082	11.9	238	16.4	497	13.9	705	11.8
\$1.00 - \$1.50	6,452	16.7	3,895	17.4	1,285	15.4	1,010	16.9	262	13.8
\$1.50 - \$2.00	5,953	22.1	2,691	22.4	2,278	21.7	659	21.1	325	25.5
\$2.00 - \$2.50	4,290	25.5	2,492	25.0	1,307	27.3	363	29.3	128	16.1
\$2.50 - \$3.00	2,716	28.5	1,072	29.3	1,378	26.9	266	35.5	-	-
\$3.00 - \$3.50	3,396	30.8	176	28.9	3,213	30.9	7	31.6	-	-
\$3.50 - \$4.00	116	34.8	36	25.8	32	35.6	7	17.9	41	62.9
\$4.00 and over	1,415	49.8	336	39.9	943	53.6	15	116.0	121	53.9

population, whereas in units spending \$4.00 and over per capita the ratio was 49.8. Comparable ratios in 1958 were 7.8 and 51.2, respectively. Table 20 indicates that it takes an expenditure of at least \$1.50 per capita in order to maintain a personnel-population ratio of professional and technical personnel in excess of 20 workers per 100,000 population. This minimum expenditure was reflected for all types of health organization. The table further indicates that it is necessary to spend more than \$3 per capita if the ratio of professional and technical personnel is to be maintained at a rate exceeding 30 per 100,000 population.

Within the four individual types of organizations, the national pattern of personnel rates according to funds expended for health services was somewhat distorted by isolated units which were in the extreme. In some units, a low per capita expenditure was reflected but the personnel rate was relatively high, and in others the reverse situation was observed.

Table 21 shows the number of organizations within each per capita expenditure interval grouped according to personnel rates. In the 97 health units spending less than \$0.50 per person, 90 percent had personnel-population ratios of less than 20 workers per 100,000 persons. In the 421 units spending between \$0.50 and \$1.00, 96 percent had personnel-population ratios of less than 20 workers per 100,000 persons. These data add emphasis to the previously mentioned fact that expenditures of local health units must exceed \$1.50 in order to maintain a staff of professional and technical workers in excess of 20 per 100,000 population. Generally, higher per capita expenditures result in higher personnel-population ratios of professional and technical personnel.

#### Personnel-Population Ratios for Selected Types of Full-Time Personnel

Tables 22, 23, and 24 show for public health physicians, nurses, and sanitarians, separately, and for all other professional and technical workers combined, a distribution of reporting organizations according to the full-time personnel-population ratios in jurisdictions of various population size, per capita income, and per capita expenditure intervals.

In 1960 there were 610 units without a full-time physician, as compared to 522 units in 1958. An additional 248 units employed less than 1 physician per 100,000 population. The majority of units with a full-time physician ratio exceeding 3 per 100,000 persons included areas with a population under 35,000. For organizations serving the more populous areas--areas exceeding 100,000--the full-time physician rate usually was below 2 per 100,000. This reflects the widespread use of part-time physicians in jurisdictions serving larger populations.

The extreme shortage of nurses is evidenced throughout local health jurisdictions. There were 56 units (3.6 percent) which employed no full-time nurses. At the other extreme there were 76 units, or about 5 percent, that had sufficient nurses on the staff to maintain a ratio of 1 nurse for every 5,000 population. The number of health departments without the service of a nurse or which had less than 1 per 100,000 population has increased



Table 21.--Number of Health Organizations within Specified Per Capita Expenditure Intervals, Grouped According to Ratio of Full-Time Official Health Agency Professional and Technical Personnel per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organizations	Number of organizations in each per capita expenditure interval									
		No data	Under \$0.50	\$0.50- 1.00	\$1.00- 1.50	\$1.50- 2.00	\$2.00- 2.50	\$2.50- 3.00	\$3.00- 3.50	\$3.50- 4.00	\$4.00 & over
Totals	<u>1,557</u>	<u>171</u>	<u>97</u>	<u>421</u>	<u>439</u>	<u>236</u>	<u>103</u>	<u>44</u>	<u>21</u>	<u>8</u>	<u>17</u>
No data	-	-	-	-	-	-	-	-	-	-	-
Under 5	43	10	19	6	6	2	-	-	-	-	-
5 - 10	208	38	48	102	16	3	-	-	1	-	-
10 - 15	425	43	17	232	113	14	2	3	1	-	-
15 - 20	377	25	3	64	204	70	7	3	-	1	-
20 - 25	229	30	2	9	81	79	23	3	1	1	-
25 - 30	117	11	2	2	12	43	33	8	4	2	-
30 - 35	76	7	4	1	2	19	23	12	6	1	1
35 - 40	36	4	1	-	2	2	10	8	6	2	1
40 - 45	14	2	-	-	-	2	3	3	1	-	3
45 - 50	6	-	-	-	-	-	1	2	1	-	2
50 and over	26	1	1	5	3	2	1	2	-	1	10

Table 22.--Distribution of Health Organizations According to Population Size and Ratio of Professional and Technical Personnel of Different Types per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organi- zations	Number of organizations in each population interval								
		Under 5,000	5,000- 15,000	15,000- 25,000	25,000- 35,000	35,000- 50,000	50,000- 100,000	100,000- 250,000	250,000- 500,000	500,000 and over
PHYSICIANS										
Totals	1,557	17	189	214	173	242	375	213	77	57
None	610	14	116	132	83	98	112	32	18	5
Under 1	248	-	1	8	12	8	18	122	41	38
1 - 2	402	-	24	29	21	30	218	53	17	10
2 - 3	187	1	26	18	8	105	21	6	-	2
3 - 4	68	-	9	5	47	-	5	-	1	1
4 - 5	19	-	6	9	2	-	1	-	-	1
5 and over	23	2	7	13	-	1	-	-	-	-
NURSES										
Totals	1,557	17	189	214	173	242	375	213	77	57
None	56	7	19	18	3	3	6	-	-	-
Under 1	8	-	-	1	1	-	-	6	-	-
1 - 5	231	-	-	30	36	41	60	38	16	10
5 - 7	265	-	7	52	36	48	64	32	13	13
7 - 10	387	-	58	34	46	58	100	54	22	15
10 - 15	383	-	50	54	33	66	98	53	18	11
15 - 20	151	-	35	18	12	15	40	21	5	5
20 and over	76	10	20	7	6	11	7	9	3	3
SANITATION PERSONNEL										
Totals	1,557	17	189	214	173	242	375	213	77	57
None	119	13	56	30	9	5	2	4	-	-
Under 1	18	-	-	2	-	-	1	4	9	2
1 - 5	666	1	32	71	105	122	181	97	34	23
5 - 7	395	1	27	81	33	74	106	54	12	7
7 - 10	242	-	48	18	18	29	61	36	15	17
10 - 15	96	-	24	10	5	10	21	14	5	7
15 - 20	16	1	2	2	3	2	1	4	-	1
20 and over	5	1	-	-	-	-	2	-	2	-
OTHER PROFESSIONAL AND TECHNICAL WORKERS										
Totals	1,557	17	189	214	173	242	375	213	77	57
None	666	17	119	131	100	119	147	22	10	1
Under 1	167	-	12	27	25	25	23	31	16	8
1 - 5	514	-	22	28	36	75	163	122	40	28
5 - 7	111	-	11	20	5	12	26	17	7	13
7 - 10	52	-	10	4	3	7	7	13	3	5
10 - 15	35	-	11	3	3	3	6	7	1	1
15 - 20	7	-	2	1	1	1	1	1	-	-
20 and over	5	-	2	-	-	-	2	-	-	1

Table 23.--Distribution of Health Organizations According to Per Capita Income Interval and Ratio of Professional and Technical Personnel of Different Types per 100,000 Population in the Jurisdiction Served

Personnel rate per 100,000 persons	Total organi- zations	Number of organizations in each per capita income interval								
		No data	Under \$500	\$ 500- 1,000	\$1,000- 1,500	\$1,500- 2,000	\$2,000- 2,500	\$2,500- 3,000	\$3,000- 3,500	\$3,500 & over
PHYSICIANS										
Totals	<u>1,557</u>	<u>55</u>	<u>2</u>	<u>300</u>	<u>544</u>	<u>479</u>	<u>131</u>	<u>31</u>	<u>12</u>	<u>3</u>
None	610	35	1	110	204	173	59	20	5	3
Under 1	248	11	-	23	54	122	35	2	1	-
1 - 2	402	2	-	77	167	120	26	7	3	-
2 - 3	187	3	1	52	77	44	6	2	2	-
3 - 4	68	3	-	24	25	13	2	-	1	-
4 - 5	19	-	-	8	4	5	2	-	-	-
5 and over	23	1	-	6	13	2	1	-	-	-
NURSES										
Totals	<u>1,557</u>	<u>55</u>	<u>2</u>	<u>300</u>	<u>544</u>	<u>479</u>	<u>131</u>	<u>31</u>	<u>12</u>	<u>3</u>
None	56	7	-	10	8	17	7	3	1	3
Under 1	8	-	-	1	-	7	-	-	-	-
1 - 5	231	3	-	30	84	81	26	4	3	-
5 - 7	265	10	-	60	99	74	13	4	5	-
7 - 10	387	10	1	76	146	125	23	5	1	-
10 - 15	383	10	1	83	136	112	34	7	-	-
15 - 20	151	4	-	31	48	45	19	4	-	-
20 and over	76	11	-	9	23	18	9	4	2	-
SANITATION PERSONNEL										
Totals	<u>1,557</u>	<u>55</u>	<u>2</u>	<u>300</u>	<u>544</u>	<u>479</u>	<u>131</u>	<u>31</u>	<u>12</u>	<u>3</u>
None	119	14	-	23	41	20	8	9	2	2
Under 1	18	1	-	1	6	10	-	-	-	-
1 - 5	666	16	1	146	242	199	47	11	4	-
5 - 7	395	9	1	80	148	118	32	5	2	-
7 - 10	242	8	-	31	81	87	27	5	2	1
10 - 15	96	6	-	18	20	33	16	1	2	-
15 - 20	16	1	-	-	5	9	1	-	-	-
20 and over	5	-	-	1	1	3	-	-	-	-
OTHER PROFESSIONAL AND TECHNICAL WORKERS										
Totals	<u>1,557</u>	<u>55</u>	<u>2</u>	<u>300</u>	<u>544</u>	<u>479</u>	<u>131</u>	<u>31</u>	<u>12</u>	<u>3</u>
None	666	15	2	170	286	159	25	4	4	1
Under 1	167	3	-	57	69	33	5	-	-	-
1 - 5	514	17	-	58	153	208	57	17	4	-
5 - 7	111	9	-	10	18	44	23	5	1	1
7 - 10	52	3	-	2	13	20	11	2	1	-
10 - 15	35	3	-	2	4	13	7	3	2	1
15 - 20	7	2	-	1	1	1	2	-	-	-
20 and over	5	3	-	-	-	1	1	-	-	-



Table 24.--Distribution of Health Organizations According to Per Capita Expenditure and Ratio of Professional and Technical Personnel of Different Types per 100,000 Population in the Jurisdiction Served

Personnel rate per 100,000 persons	Total organi- zations	Number of organizations in each per capita expenditure interval									
		No data	Under \$0.50	\$0.50- 1.00	\$1.00- 1.50	\$1.50- 2.00	\$2.00- 2.50	\$2.50- 3.00	\$3.00- 3.50	\$3.50- 4.00	\$4.00 & over
PHYSICIANS											
Totals	1,557	171	97	421	439	236	103	44	21	8	17
None	610	125	60	181	140	66	20	7	6	-	5
Under 1	248	19	23	73	68	42	16	6	-	-	1
1 - 2	402	11	10	117	136	71	34	15	5	2	1
2 - 3	187	9	3	38	69	35	15	5	6	2	5
3 - 4	68	3	1	9	22	13	13	3	1	1	2
4 - 5	19	1	-	3	2	5	2	4	1	-	1
5 and over	23	3	-	-	2	4	3	4	2	3	2
NURSES											
Totals	1,557	171	97	421	439	236	103	44	21	8	17
None	56	27	2	9	12	4	-	1	1	-	-
Under 1	8	2	4	1	1	-	-	-	-	-	-
1 - 5	231	41	49	104	27	10	-	-	-	-	-
5 - 7	265	26	21	128	68	18	2	1	1	-	-
7 - 10	387	23	13	129	160	49	9	3	1	-	-
10 - 15	383	30	4	40	142	103	43	12	4	3	2
15 - 20	151	14	2	4	25	41	37	18	7	2	1
20 and over	76	8	2	6	4	11	12	9	7	3	14
SANITATION PERSONNEL											
Totals	1,557	171	97	421	439	236	103	44	21	8	17
None	119	27	9	22	36	16	5	2	-	1	1
Under 1	18	1	11	5	1	-	-	-	-	-	-
1 - 5	666	71	70	272	178	54	12	5	2	2	-
5 - 7	395	32	4	97	135	75	30	10	8	2	2
7 - 10	242	26	-	19	75	67	33	11	7	1	3
10 - 15	96	9	2	6	12	20	22	15	3	2	5
15 - 20	16	4	1	-	1	4	-	-	1	-	5
20 and over	5	1	-	-	1	-	1	1	-	-	1
OTHER PROFESSIONAL AND TECHNICAL WORKERS											
Totals	1,557	171	97	421	439	236	103	44	21	8	17
None	666	70	45	264	174	67	25	8	7	4	2
Under 1	167	8	16	52	72	12	5	2	-	-	-
1 - 5	514	61	29	96	157	110	41	13	4	2	1
5 - 7	111	16	4	4	24	30	17	10	1	1	4
7 - 10	52	8	1	3	7	11	10	6	5	-	1
10 - 15	35	7	2	1	5	4	4	3	3	-	6
15 - 20	7	-	-	1	-	1	1	2	1	-	1
20 and over	5	1	-	-	-	1	-	-	-	1	2

substantially since 1958. Only 39 percent of the units reporting employed sufficient nurses to maintain a ratio of one nurse to 10,000 population, this percentage being almost identical to that reported two years ago.

The reporting organizations employed sanitation workers at a rate of 5.5 per 100,000 population. (See table 15.) Included in this group of workers were engineers, professionally trained sanitarians, veterinarians, and nongraduate personnel engaged in general sanitation activities. There were 119 units or 7.6 percent which employed no sanitation personnel as of January 1, 1960. Two years ago the comparable number of units was 87. Less than one-fourth of the organizations had enough sanitation workers to provide at least 1 sanitarian for every 15,000 persons in the jurisdiction. Public health authorities have previously indicated that such a ratio constitutes a desirable minimum goal.

Less than 60 percent of the reporting jurisdictions employed any professional or technical personnel other than physicians, nurses, and sanitation workers. Only 13 percent of the units employed more than 5 such workers per 100,000 population. Usually, the units serving the larger population groups reported other professional and technical workers more frequently than those serving the smaller population groups.

#### Contribution of Part-Time Professional and Technical Personnel to the Local Public Health Program

Two years ago data were collected for the first time on the part-time professional and technical personnel employed by local health departments. The data collected at that time confirmed the fact that many local health departments unable to employ full-time workers have resorted to part-time professional and technical personnel to meet basic shortages. For many of the highly technical phases of the local health department's clinical program, the services provided by skilled professional and technical personnel employed on a part-time basis may be as good as or better than, those provided by less specialized personnel employed on a full-time basis.

While it was anticipated that a complete count of part-time professional and technical personnel employed in unorganized areas as well as in organized areas would be reported, the data secured two years ago for unorganized areas were quite incomplete. Likewise, data reported in 1960 for such areas were too incomplete for inclusion in this analysis.

The increased number of part-time workers reported in 1960 over 1958 bears out the fact that reports for the initial year represented an understatement of the full impact of part-time personnel upon the staffing of local health units. For example, there were 10,404 part-time professional and technical employees reported in 1958 and 12,534 reported in 1960.

The report requests three items of information in regard to professional and technical personnel employed on a part-time basis, as follows: The total number of individuals employed on a part-time basis by class of personnel; the total number of hours which such individuals were employed annually; and



the total amount paid for their services on an annual basis. Data on expenditures were requested solely to determine whether the relationship between hours reported and expenditures reported was reasonable.

In order to relate the contribution of part-time employees to full-time employees, each 2,000 hours of part-time service was considered equivalent to a full-time employee of the same professional category. This conversion factor seems to be reasonably conservative since a full-time employee normally works from 1,600 to 1,800 hours per year, exclusive of holidays and vacation.

The 12,534 part-time professional and technical persons were employed for a total of 3,275,467 hours during a twelve-month period. This figure is nearly 100,000 hours greater than that reported two years ago. Their services were equivalent to 1,639 full-time employees in comparison to 1,588 reported in 1958. Table 25 shows by type of personnel, the number of part-time professional and technical employees, the number of hours employed annually, their full-time personnel equivalents, and the number of units reporting employment of one or more part-time employees of the categories indicated.

The use of physicians by local health departments on a part-time basis is a widespread practice. There were 995 units, or 64 percent of the total, which indicated employment of one or more part-time physicians. This represents an increase of 92 units over the data reported two years ago. The number of physicians employed on a part-time basis totaled 8,626 as compared to 6,901 in 1958. Converted to full-time equivalents, these part-time medical personnel represent the addition of 941 physicians to the 1,402 full-time physicians serving local health organizations. Dentists comprised the second largest group of part-time workers, with 1,528 employed in 366 units. Their services were equivalent to 174 dentists working full time. While more dentists were employed by more units on a part-time basis in 1960 than in 1958, they worked less hours and constituted fewer full-time equivalents than in 1958. Other part-time workers reported by health departments and their full-time equivalents are also shown in table 25.

The 1,639 full-time equivalents were distributed among the different types of local health organizations, as follows: City health departments, 50.7 percent; single county units, 29.0 percent; State health districts, 15.0 percent; and local health districts, 5.3 percent. (See table 26.) It is apparent that the employment of part-time professional and technical personnel is a practice most frequently used by city health departments to augment their full-time staff and least frequently used by local health districts. Nearly three-fifths of the physicians and slightly more than two-thirds of the dentists were reported by city health departments; however, in both instances the proportion of personnel of these types reported by cities was appreciably lower in 1960 than in 1958.

By combining the full-time personnel equivalents of part-time employees with the full-time professional and technical employees, the number of workers per 100,000 persons is somewhat increased in the four types of units. The ratio for the total professional and technical staff of all units was raised from 18.9 to 19.9 employees per 100,000. The ratios for single county units, city health departments, local health districts, and State health districts were raised from 18.7 to 19.4, 24.4 to 26.0, 18.5 to 19.4, and 11.1 to 11.8,



Table 25.--Number of Professional and Technical Personnel of Different Classifications Employed Part Time by Official Health Agencies, Number of Hours Employed Annually, Full-Time Personnel Equivalents, and Number of Organizations Employing Such Personnel  
January 1, 1960

Type of personnel	Number of			
	Employees	Hours employed annually	Full-time personnel equivalents	Organizations employing
All types	<u>12,534</u>	<u>3,275,467</u>	<u>1,639</u>	
Public health physicians	8,626	1,879,534	941	995
Public health dentists	1,528	351,653	174	366
Dental hygienists	13	3,550	2	11
Public health nurses	448	276,958	142	153
Clinic nurses	358	197,077	99	103
Sanitation personnel:				
Engineers	5	1,968	1	5
Veterinarians	209	79,635	40	148
Professional sanitarians	255	89,481	45	48
Other	298	126,438	63	85
Laboratory personnel	86	49,525	25	63
Health educators	7	6,120	3	7
Nutritionists	7	2,689	1	5
Medical social workers	11	6,275	3	10
Psychiatric social workers	34	14,717	7	19
Psychologists	77	28,886	15	54
Analysts and statisticians	34	5,378	3	6
Public health investigators	21	6,733	3	17
X-ray technicians	78	26,996	13	57
Physical therapists	117	5,482	3	20
Administrative management	76	24,484	12	20
Other professional and technical:				
Medical aides and assistants	78	31,345	15	36
Technicians and therapists				
(other than identified above)	161	53,793	26	61
Practical nurses	7	6,750	3	4

Table 25a.--Number of Professional and Technical Personnel Employed Part Time in Health Organizations of Designated Types  
January 1, 1960

Type of unit	Number of employees	Full-time equivalents	
		Number	Percent
Totals	<u>12,534</u>	<u>1,639</u>	<u>100.0</u>
Single county	4,482	476	29.0
City health department	4,224	831	50.7
Local health district	1,513	86	5.3
State health district	2,315	246	15.0

Table 26.--Number of Full-Time Equivalents of Professional and Technical Personnel of Different Classifications Employed Part Time by Official Health Agencies, Arranged by Type of Local Health Organization January 1, 1960

Type of personnel	Total full-time equivalents	Number of full-time equivalents, by type of organization			
		Single county	City health department	Local health district	State health district
Totals	<u>1,639</u>	<u>476</u>	<u>831</u>	<u>86</u>	<u>246</u>
Public health physicians	941	246	548	34	113
Public health dentists	174	33	117	16	8
Dental hygienists	2	1	1	-	-
Public health nurses	142	79	21	12	30
Clinic nurses	99	26	61	4	8
Sanitation personnel:					
Engineers	1	1	-	-	-
Veterinarians	40	19	14	4	3
Professional sanitarians	45	9	5	1	30
Other	63	5	23	2	33
Laboratory personnel	25	8	14	1	2
Health educators	3	1	1	1	-
Nutritionists	1	-	-	1	-
Medical social workers	3	-	1	1	1
Psychiatric social workers	7	6	-	1	-
Psychologists	15	12	1	1	1
Analysts and statisticians	3	1	-	-	2
Public health investigators	3	3	-	-	-
X-ray technicians	13	8	3	2	-
Physical therapists	3	1	-	1	1
Administrative management	12	1	5	-	6
Others:					
Medical aides and assistants	15	2	10	3	-
Technicians and therapists	26	11	6	1	8
Practical nurses	3	3	-	-	-

respectively. (See tables 20 and 27.) The most significant increase in personnel ratios resulting from the combination of full-time employees and the full-time equivalents of part-time workers occurred in public health physicians. The physician ratio per 100,000 persons was increased from 0.8 to 1.4 for all units and from 0.9 to 2.0 for city health departments.

Table 28 presents a distribution of the reporting units by types classified as to personnel-population ratios. Both full-time employees and full-time equivalents of part-time personnel were used in computing these ratios. Comparison of the data in this table with appendix A, which represents the same data for full-time employees only, indicates the contribution made by part-time employees. Including both full-time and part-time personnel, slightly more than 6 percent of the units employed more than 35 professional and technical personnel per 100,000 population as compared to 5 percent in 1958. However, 13.3 percent of the city units employed more than 35 professional and technical personnel per 100,000 persons. The corresponding percentage for single county units was 4.5 percent, local health districts 3.0 percent, and State health districts 7.2 percent. While 14.4 percent of all units employed less than 10 workers per 100,000 persons, 38.7 percent of the State health districts were in this category; however, 43.7 percent of State health districts fell in this category in 1958.

As expected, units in the higher population brackets employed the majority of part-time workers. (See table 29.) Units of 100,000 population and over employed 78 percent of the full-time equivalents. Organized areas having populations in excess of 500,000 reported over 52 percent of the professional and technical personnel serving on a part-time basis. Only 11 percent of the total full-time equivalents were included in the reports submitted by units serving less than 50,000 population.

When full-time personnel equivalents of part-time workers were grouped according to per capita expenditures for local health services, the picture was quite different in 1960 from that reported in 1958. Wide variations were noted, which indicate further experience is necessary with the reporting of part-time workers before any reliable pattern of relationship can be established between the per capita expenditure for local health services and the extent to which part-time workers are employed. The number of full-time equivalents reported by units spending less than \$0.50 per capita more than doubled over 1958. Units spending between \$3.00 and \$3.50 per person reported the highest number of part-time personnel employed. Such units reported 26 percent of the total full-time equivalents. Included most frequently in the part-time group were physicians, dentists, and nurses. (See table 30.)

Table 31 indicates that there were relatively few part-time workers reported by units in the low and high per capita income brackets. Usually, units serving areas with incomes averaging between \$1,500 and \$2,500 per person reported the services of part-time employees more frequently than other units. From these data it may be concluded that areas with low economic resources, as measured by per capita income, are unable financially to augment the full-time staff with part-time workers. In fact, these areas frequently have insufficient resources to employ full-time workers to the extent necessary to render basic public health services. On the other hand, these data seem to indicate that areas with high per capita incomes have the resources to place all employees on a full-time basis.



Table 27.--Total Professional and Technical Personnel of Different Classifications (Full-Time Employees and Full-Time Equivalents of Part-Time Employees) Employed by Official Health Agencies and Ratio of Personnel to 100,000 Population Covered by Health Organizations of Different Types  
January 1, 1960

Type of personnel	Number and ratio of personnel by type of organization							
	Total official health agency personnel		Single county		City health department		Local health district	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
All types	33,289 <u>1/</u>	19.9	13,515	19.4	12,955	26.0	3,043	19.4
Public health physicians	2,343	1.4	937	1.3	979	2.0	224	1.4
Public health dentists	483	0.3	124	0.2	303	0.6	33	0.2
Dental hygienists	397	0.2	63	0.1	294	0.6	9	0.1
Public health nurses	14,526 <u>1/</u>	8.7	6,376	9.1	4,413	8.8	1,619	10.3
Clinic nurses	746	0.4	343	0.5	331	0.7	57	0.4
Sanitation personnel:								
Engineers	447	0.3	153	0.2	85	0.2	30	0.2
Veterinarians	285	0.2	92	0.1	159	0.3	19	0.1
Professional sanitarians	6,157	3.7	2,693	3.9	2,181	4.4	693	4.4
Other	2,496	1.5	923	1.3	1,237	2.5	127	0.8
Laboratory personnel	1,514	0.9	475	0.7	945	1.9	51	0.3
Health educators	284	0.2	130	0.2	109	0.2	12	0.1
Nutritionists	137	0.1	43	0.1	58	0.1	2	*
Medical social workers	231	0.1	68	0.1	125	0.3	7	*
Psychiatric social workers	196	0.1	125	0.2	35	0.1	19	0.1
Psychologists	119	0.1	63	0.1	29	0.1	11	0.1
Analysts and statisticians	220	0.1	89	0.1	120	0.2	6	*
Public health investigators	396	0.2	154	0.2	171	0.3	27	0.2
X-ray technicians	368	0.2	156	0.2	171	0.3	24	0.2
Physical therapists	161	0.1	80	0.1	34	0.1	8	0.1
Administrative management	521	0.3	145	0.2	321	0.7	18	0.1
Other professional and technical:								
Medical aides and assistants	822	0.5	118	0.2	664	1.3	39	0.2
Technicians and therapists	314	0.2	120	0.2	121	0.2	6	*
(other than identified above)								
Practical nurses	126	0.1	45	0.1	70	0.1	2	*

1/ Includes 533 public health nurses, employed by voluntary agencies, under contract to provide service to official health agencies.

\* Less than 0.05. In each column where more than one asterisk (\*) is shown, these items total to 0.1.

Table 28.--Distribution of Health Organizations of Different Types, According to Ratio of Official Health Agency Professional and Technical Personnel (Full-Time Employees and Full-Time Equivalents of Part-Time Employees) per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organizations		Single county		City health department		Local health district		State health district	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals	<u>1,557</u>	<u>100.0</u>	<u>902</u>	<u>100.0</u>	<u>307</u>	<u>100.0</u>	<u>237</u>	<u>100.0</u>	<u>111</u>	<u>100.0</u>
Under 5	35	2.3	12	1.3	6	1.9	4	1.7	13	11.7
5 - 10	189	12.1	109	12.1	34	11.1	16	6.7	30	27.0
10 - 15	401	25.8	267	29.6	50	16.3	54	22.8	30	27.0
15 - 20	385	24.7	240	26.6	45	14.7	82	34.6	18	16.3
20 - 25	235	15.1	125	13.9	57	18.6	46	19.4	7	6.3
25 - 30	142	9.1	69	7.6	50	16.3	22	9.3	1	0.9
30 - 35	74	4.8	40	4.4	24	7.8	6	2.5	4	3.6
35 - 40	49	3.1	25	2.8	21	6.8	3	1.3	-	-
40 - 45	19	1.2	6	0.7	10	3.2	3	1.3	-	-
45 - 50	8	0.5	3	0.3	3	1.0	-	-	2	1.8
50 and over	20	1.3	6	0.7	7	2.3	1	0.4	6	5.4

Table 29.--Number of Full-Time Equivalents of Professional and Technical Personnel Employed Part Time by Official Health Agencies, Grouped According to Population Intervals  
January 1, 1960

Type of personnel	Total	Number of Full-Time Personnel Equivalents in Each Population Interval								
		Under 5,000	5,000- 15,000	15,000- 25,000	25,000- 35,000	35,000- 50,000	50,000- 100,000	100,000- 250,000	250,000- 500,000	500,000 and over
All types	<u>1,639</u>	<u>3</u>	<u>26</u>	<u>42</u>	<u>40</u>	<u>73</u>	<u>178</u>	<u>209</u>	<u>211</u>	<u>857</u>
Public health physicians	941	1	6	14	14	29	77	103	104	593
Public health dentists	174	-	3	3	3	7	17	21	11	109
Dental hygienists	2	-	-	-	-	-	1	1	-	-
Public health nurses	142	2	11	7	6	7	17	17	53	22
Clinic nurses	99	-	-	2	3	4	12	10	9	59
Engineers	1	-	-	-	-	-	1	-	-	-
Veterinarians	40	-	1	2	2	6	13	12	3	1
Professional sanitarians	45	-	1	3	2	2	2	6	10	19
Other sanitation personnel	63	-	2	5	3	7	10	7	6	23
Laboratory personnel	25	-	1	1	2	3	4	12	1	1
Health educators	3	-	-	-	-	1	-	-	1	1
Nutritionists	1	-	-	-	-	-	1	-	-	-
Medical social workers	3	-	-	-	-	-	-	1	-	2
Psychiatric social workers	7	-	-	-	-	-	1	1	3	2
Psychologists	15	-	-	1	2	1	4	3	1	3
Analysts and statisticians	3	-	-	-	-	-	-	-	1	2
Public health investigators	3	-	-	-	-	-	-	1	2	-
X-ray technicians	13	-	-	1	1	1	5	3	1	1
Physical therapists	3	-	-	-	-	-	1	1	1	-
Administrative management	12	-	-	-	1	1	3	1	1	6
Medical aides and assistants	15	-	-	2	-	2	5	-	1	-
Technicians and therapists	26	-	1	1	1	2	4	5	1	11
Practical nurses	3	-	-	-	-	-	-	-	1	2



Table 30.--Number of Full-Time Equivalents of Professional and Technical Personnel Employed Part Time by Official Health Agencies, Grouped According to Per Capita Expenditure Intervals  
January 1, 1960

Type of personnel	Total	Number of Full-Time Personnel Equivalents in Each Per Capita Expenditure Interval									
		No data	Under \$0.50	\$0.50-1.00	\$1.00-1.50	\$1.50-2.00	\$2.00-2.50	\$2.50-3.00	\$3.00-3.50	\$3.50-4.00	\$4.00 & over
All types	<u>1,639</u>	<u>123</u>	<u>105</u>	<u>152</u>	<u>262</u>	<u>164</u>	<u>199</u>	<u>121</u>	<u>424</u>	<u>1</u>	<u>88</u>
Public health physicians	941	48	77	63	109	83	107	66	315	1	72
Public health dentists	174	17	6	8	13	18	21	23	56	-	12
Dental hygienists	2	1	-	1	-	-	-	-	-	-	-
Public health nurses	142	9	2	23	53	19	19	14	2	-	1
Clinic nurses	99	4	1	8	13	12	10	3	48	-	-
Engineers	1	-	-	-	-	-	1	-	-	-	-
Veterinarians	40	6	1	11	10	7	4	-	1	-	-
Professional sanitarians	45	4	3	6	20	4	7	1	-	-	-
Other sanitation personnel	63	16	8	14	12	3	9	1	-	-	-
Laboratory personnel	25	7	2	3	2	6	-	4	-	-	1
Health educators	3	1	-	1	-	1	-	-	-	-	-
Nutritionists	1	1	-	-	-	-	-	-	-	-	-
Medical social workers	3	-	-	-	1	1	-	1	-	-	-
Psychiatric social workers	7	-	-	-	2	3	4	3	-	-	1
Psychologists	15	1	-	2	4	-	2	-	-	-	-
Analysts and statisticians	3	-	-	-	-	-	1	-	1	-	-
Public health investigators	3	-	-	1	1	-	2	-	-	-	-
X-ray technicians	13	-	-	3	5	2	2	1	-	-	-
Physical therapists	3	-	-	1	1	-	-	1	-	-	-
Administrative management	12	5	-	1	3	-	-	-	1	-	-
Medical aides and assistants	15	2	3	1	2	2	4	1	-	-	-
Technicians and therapists	26	1	2	5	10	3	3	2	-	-	-
Practical nurses	3	-	-	-	1	-	2	-	-	-	-

Table 31.--Number of Full-Time Equivalents of Professional and Technical Personnel Employed Part Time by  
Official Health Agencies, Grouped According to Per Capita Income Intervals  
January 1, 1960

Type of personnel	Total	Number of Full-Time Personnel Equivalents in Each per Capita Income Interval								
		No data	Under \$500	\$ 500- 1,000	\$1,000- 1,500	\$1,500- 2,000	\$2,000- 2,500	\$2,500- 3,000	\$3,000- 3,500	\$3,500 & over
All types	1,639	126	-	35	157	565	678	70	7	1
Public health physicians	941	27	-	15	81	297	470	49	2	-
Public health dentists	174	6	-	3	11	69	76	8	1	-
Dental hygienists	2	1	-	-	-	1	-	-	-	-
Public health nurses	142	27	-	9	20	65	19	2	-	-
Clinic nurses	99	-	-	2	11	22	60	2	2	-
Engineers	1	-	-	-	1	-	-	-	-	-
Veterinarians	40	2	-	3	9	21	5	-	-	-
Professional sanitarians	45	25	-	1	4	9	6	-	-	-
Other sanitation personnel	63	22	-	-	3	26	8	2	1	1
Laboratory personnel	25	-	-	-	2	11	11	-	1	-
Health educators	3	-	-	-	-	1	1	1	-	-
Nutritionists	1	1	-	-	-	-	-	-	-	-
Medical social workers	3	-	-	-	-	2	1	-	-	-
Psychiatric social workers	7	-	-	-	-	4	-	3	-	-
Psychologists	15	-	-	-	5	9	-	1	-	-
Analysts and statisticians	3	2	-	-	-	1	-	-	-	-
Public health investigators	3	-	-	-	-	2	1	-	-	-
X-ray technicians	13	-	-	1	3	7	1	1	-	-
Physical therapists	3	-	-	-	1	1	1	-	-	-
Administrative management	12	4	-	-	1	1	2	-	-	-
Medical aides and assistants	15	-	-	-	1	5	7	-	-	-
Technicians and therapists	26	9	-	1	3	6	7	1	-	-
Practical nurses	3	-	-	-	-	1	2	-	-	-

## Personnel Employed by Official Agencies Other Than Health Agencies

Public health personnel employed full-time by other official agencies performing local public health services totaled 11,457 as of January 1, 1960. This number is practically identical with the number reported on January 1, 1958. These employees represented one-fifth of the full-time public health personnel employed by all tax-supported agencies and were reported by local health units in 44 States and the District of Columbia. (See table 32.) For the most part, official agencies other than health agencies employing public health personnel include boards of education, welfare departments, the Department of Agriculture, and governmental hospital commissions or boards (exclusive of Army, Navy, Veterans Administration, and Public Health Service Hospitals).

A high proportion of these workers--40 percent--were serving local areas in California and New York. Other States in which relatively large numbers of public health personnel were employed by official agencies other than health agencies included Pennsylvania, Illinois, New Jersey, Texas, and Massachusetts.

The proportion of workers of various types employed by official agencies other than health varied considerably from that shown for official health agency staffs. Participation of other official agencies in school health programs is indicated particularly in the high proportion of public health nurses and dental hygienists employed. Nurses comprised over 70 percent of all public health employees of other governmental agencies. These nurses for the most part are employed by boards of education in the school health program. The relatively large number of psychiatric social workers and psychologists employed by such agencies indicate that at least a part of the community mental health program is carried out by an agency other than the official health agency. For example, the number of psychologists employed by such agencies greatly exceeds the number employed by official health agencies.



Table 32.--Number of Full-Time Public Health Workers of Different Classifications Employed by Other Official Agencies Rendering Some Type of Health Service in Local Areas with Health Organization  
January 1, 1960

State	Total	Public Health Physicians	Public Health Nurses	Clinic Nurses	Public Health Dentists	Dental Hygienists	Engineers	Professional Sanitarians	Other Sanitation Personnel	Veterinarian Personnel	Laboratory Personnel	Health Educators	Nutritionists	Medical Social Workers	Psychiatric Social Workers	Psychologists	Analysts and Statisticians	Public Health Investigators	X-ray Technicians	Physical Therapists	Administrative Management Personnel	Clerks	Maintenance and Service Personnel	All others
Total	11,457	241	7,956	162	132	633	27	73	61	16	315	73	23	69	185	463	5	18	35	69	51	428	75	347
Alabama	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arizona	219	-	196	3	-	1	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	7	3	6
Arkansas	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
California	1,857	95	1,268	4	19	16	19	6	-	-	25	8	-	6	60	107	1	-	5	15	11	126	18	48
Colorado	115	3	86	15	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	1
Connecticut	176	7	57	31	1	27	-	-	-	-	-	-	1	3	17	7	-	-	2	1	3	6	5	8
Delaware	87	1	86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dist. of Col.	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Florida	76	2	11	1	-	-	-	-	6	-	17	-	-	-	5	7	-	2	-	-	1	11	-	10
Georgia	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hawaii	88	-	-	3	-	41	-	-	12	7	4	-	-	10	-	-	-	-	-	-	-	6	1	2
Idaho	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Illinois	591	11	459	8	7	2	-	4	2	3	6	1	1	3	6	4	-	-	-	1	1	26	1	45
Indiana	292	2	236	-	1	1	-	-	-	-	-	-	-	-	-	7	-	-	-	-	4	8	1	30
Iowa	177	1	165	2	1	6	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Kansas	257	-	245	1	-	-	-	9	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kentucky	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Louisiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maine	38	-	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maryland	65	1	26	4	1	-	-	-	3	3	3	1	-	1	-	-	-	-	-	3	1	2	-	16
Massachusetts	404	4	378	2	4	5	1	-	-	-	5	3	-	-	-	-	-	-	-	-	-	-	-	-
Michigan	219	12	148	-	4	6	1	12	3	-	-	1	2	19	8	5	-	2	4	4	1	4	-	11
Minnesota	382	4	272	4	10	13	-	-	-	-	-	1	-	-	-	7	2	-	16	-	-	19	-	3
Mississippi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Missouri	287	1	261	2	-	-	-	8	-	-	-	7	-	-	4	6	-	-	-	-	-	2	-	2
Montana	3	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	1	-	-
Nebraska	68	-	43	-	-	-	-	1	1	-	-	-	2	-	-	6	-	-	-	-	-	-	-	13
Nevada	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Hampshire	20	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Jersey	1,014	9	876	11	4	3	1	-	-	-	1	7	5	3	6	22	-	8	1	-	6	27	12	12
New Mexico	126	-	107	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New York	2,699	37	1,398	4	21	451	4	2	9	1	250	37	2	9	45	214	-	2	1	7	6	76	28	95
North Carolina	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ohio	294	4	163	32	8	11	-	-	2	1	1	2	1	1	2	11	1	1	5	-	8	26	-	9
Oklahoma	76	3	60	-	-	-	-	3	-	-	-	-	-	-	4	3	-	-	-	-	-	3	-	-
Oregon	26	-	24	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pennsylvania	591	29	371	12	50	34	-	-	-	-	2	1	2	8	1	27	-	2	-	-	8	23	4	7
Rhode Island	89	-	86	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-
South Carolina	26	-	5	6	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	5	-	2
South Dakota	6	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tennessee	20	2	-	9	-	-	-	3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Texas	646	6	573	8	1	2	1	1	6	-	1	1	4	1	2	8	1	-	-	4	-	17	-	10
Utah	17	1	5	-	-	-	-	-	-	-	-	-	-	3	3	1	-	-	-	-	-	1	-	-
*Vermont	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Virginia	95	3	62	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington	155	2	116	-	2	2	-	-	1	-	-	2	2	1	4	8	-	-	-	-	-	7	1	5
West Virginia	35	1	23	-	-	5	-	1	1	-	-	-	2	1	3	3	-	-	-	-	-	4	1	11
Wisconsin	66	1	35	-	-	7	-	-	-	-	-	2	2	-	3	5	-	-	-	-	-	3	-	1
Wyoming	5	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-

\* Vermont has no local health units recognized by the State health department.

## S U M M A R Y

A total of 1,577 health organizations providing local health services submitted the Report of Public Health Personnel as of January 1, 1960. These units serve 2,425 counties and 307 cities. The combined population residing in organized areas covered by the reports totaled almost 167 million, or 94.4 percent of the estimated population of the country.

A breakdown of local health units on an organizational basis shows that 58 percent of all reporting units were of the single county type; 20 percent were city health departments; 15 percent were local health districts; and 7 percent were State health districts. Although the number of State health districts was relatively small, they included 28 percent of the organized counties.

As in previous years, the reports generally reflected need for the development of local health units to serve more populous areas. Despite the fact there has been some consolidation of governmental units and merging of resources, as well as sharing of personnel, 38 percent of all reporting organizations included populations totaling less than 35,000. About 49 percent of the single county units, 34 percent of the city health departments, and 18 percent of the local health districts served areas in which the population was under 35,000. The greater portion of the jurisdictions and counties included had a population density ranging between 18 and 90 persons per square mile. To the extreme, 11 percent of the organized areas had a density ratio of less than 18 persons per square mile.

A total of \$238 million was reported expended during the fiscal year 1959 in local health units submitting the Report of Public Health Personnel. Of this amount, 70 percent of the total outlay was derived from local sources, 24 percent from State-appropriated funds, and 6 percent from Federal funds. Reported data show that, of the four types of health organizations, city health departments depend the least on Federal funds for support of their health department operations and State health districts the most.

The expenditure data nationally reflect insufficient funds expended on a per capita basis to meet today's public health needs, particularly in areas with a low economic level. Although some increase in the expenditures for local health services has occurred during the past few years, the amount spent by most health departments remains too low to offset the increased costs of providing health services. Of the organizations for which expenditures were reported, 37 percent had an annual expenditure during fiscal year 1959 of less than \$1.00 per person; 32 percent spent between \$1.00 and \$1.50 per person; and 31 percent spent more than \$1.50 per capita. Of those units spending in excess of \$1.50, only 11 percent reached \$3.00 per capita. The average expenditure for all units for which data were available was \$1.56 per person--\$0.19 higher than for the previous year.

An analysis of the relationship between the average income of a community and its expenditure for public health purposes revealed generally that as the income level of health jurisdictions increases the proportion of units

spending in excess of \$1.00 per person also increases. However, there were a few jurisdictions in which the average income exceeded \$2,000, but the funds expended per person for public health services averaged less than \$1.00.

There were 44,007 full-time public health workers on the staffs of reporting local health units. The personnel-population ratio remained about the same as in 1958, showing a gain of only 0.1 employees per 100,000 population.

Even with the addition of part-time professional and technical personnel to the full-time professional and technical staff, the personnel ratio remained extremely low. Physician and nursing personnel ratios, in particular, were low in a high percentage of the units.

City health departments usually employ a higher proportion of professional and technical workers in relation to population than other types of organizations. Although relatively few in number, health organizations serving communities of 500,000 population and over employed approximately 40 percent of the professional and technical workers. In almost 70 percent of the reporting units, the rate of professional and technical workers for each 100,000 population in the health jurisdiction was less than 20. Obviously, the extent of public health protection which can be provided an increasing population is limited in a large proportion of the units by the absence of a team of workers adequate in number to meet the extensive demands of a modern public health program.



# APPENDIX A

Distribution of Health Organizations of Different Types, According to Ratio of Full-Time Official Health Agency Professional and Technical Personnel per 100,000 Population in the Jurisdiction Served  
January 1, 1960

Personnel rate per 100,000 persons	Total organizations		Single county		City health department		Local health district		State health district	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Totals	1,557	100.0	902	100.0	307	100.0	237	100.0	111	100.0
Under 5	43	2.8	16	1.8	8	2.6	6	2.5	13	11.7
5 - 10	208	13.3	121	13.4	37	12.0	17	7.2	33	29.8
10 - 15	425	27.3	282	31.3	54	17.6	56	23.6	33	29.7
15 - 20	377	24.2	224	24.8	55	17.9	83	35.0	15	13.5
20 - 25	229	14.7	123	13.6	58	18.9	43	18.2	5	4.5
25 - 30	117	7.5	60	6.7	37	12.1	19	8.0	1	0.9
30 - 35	76	4.9	42	4.7	25	8.1	6	2.5	3	2.7
35 - 40	36	2.3	16	1.8	16	5.2	4	1.7	-	-
40 - 45	14	0.9	4	0.4	7	2.3	2	0.9	1	0.9
45 - 50	6	0.4	2	0.2	3	1.0	-	-	1	0.9
50 and over	26	1.7	12	1.3	7	2.3	1	0.4	6	5.4

# APPENDIX B

## Total Public Health Personnel (Full-Time and Full-Time Equivalents of Part-Time Personnel) Serving in Organized and Unorganized Areas January 1, 1960

Type of personnel	Total public health personnel serving in local areas	Number of personnel			
		Organized areas		Other official agency personnel	Unorganized areas
		Official health agency personnel	Full-time equivalents		
		Full-time	Full-time equivalents	Full-time	Full-time
All types		<u>44,007 1/2</u>	<u>2,429</u>	<u>11,457</u>	<u>398</u>
Public health physicians	58,291	1,402	941	241	-
Public health dentists	2,584	309	964	132	1
Dental hygienists	1,406	395	2	633	5
Public health nurses	1,035	<u>14,384 1/2</u>	142	7,956	234
Clinic nurses	22,716	647	99	162	-
Sanitation personnel:	908				
Engineers	478	446	1	27	4
Veterinarians	302	245	40	16	1
Professional sanitarians	6,327	6,112	45	73	97
Other	2,581	2,433	63	61	24
Laboratory personnel	1,829	1,489	25	315	-
Health educators	357	281	3	73	-
Nutritionists	160	136	1	23	-
Medical social workers	300	228	3	69	-
Psychiatric social workers	382	189	7	185	1
Psychologists	582	104	15	463	-
Analysts and statisticians	225	217	3	5	-
Public health investigators	414	393	3	18	-
X-ray technicians	403	355	13	35	-
Physical therapists	230	158	3	69	-
Administrative management	572	509	12	51	-
Fiscal and clerical	10,337	9,878	-	428	31
Maintenance, custodial, and service	1,914	1,839	-	75	-
Other professional and technical:					
Medical aides and assistants	840	807	15	18	-
Technicians and therapists	586	288	26	272	-
(other than identified above)					
Practical nurses	131	123	3	5	-
All others	692	640	-	52	-

1/ Includes 533 public health nurses, employed by voluntary agencies, under contract to provide service to official health agencies.



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